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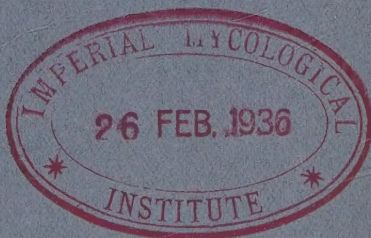
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GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

MONTHLY REPORT

FEBRUARY, 1936



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MINISTRY OF AGRICULTURE, NORTHERN IRELAND.

MONTHLY REPORT, FEBRUARY, 1936.

AGRICULTURAL NOTES.

With considerable arrears of ploughing to be made up farmers will be particularly busy this month, preparing the ground for sowing and planting. Fortunately the weather has much improved recently and should it continue to favour field work the sowing of oats and barley and the planting of potatoes may yet be carried out in good time. In connection with the sowing of barley an article appeared in last month's report giving the results from barley variety experiments at certain centres throughout the country and in this issue there appears on page 31 the results of experiments with certain varieties of oats. These results should prove of considerable assistance to farmers in selecting varieties for sowing during the coming season. A further article on page 34 giving the manurial mixtures for the different crops, not only advises the most suitable mixtures, but will also enable farmers to calculate the quantities of the different manures required, so that a complete order may be given early in the season. By doing this money may be saved in the purchase of manures.

The wireless talk on "Hints to Milk Producers" recently given from the Northern Ireland studio by Mr. H. O'H. O'Neill has been reprinted on page 9 through the kind permission of the British Broadcasting Corporation. Stock owners are also advised to read the article on "The Purchase of Ready-Mixed Rations for Stock Feeding" on page 36.

A new section entitled Marketing Notes and Memoranda has been started in this issue on page 13, and is intended to contain information of a general nature about marketing schemes, subsidies, and supplies in the British market.

AGRICULTURAL CONDITIONS AT THE 1st FEBRUARY, 1936.

Very severe weather conditions ruled throughout the past month. The first ten days of January were wet, the rains increasing in intensity with the storms which at times reached gale force, but about the 12th of the month a drier and colder period set in. The sharp frosts during this period, however, were superseded by extreme wintry conditions, several heavy snowstorms being general throughout the country during the third week of the month. These were followed by another period

of frosty weather, and the month ended on a drier and milder note. With the exception of a few days of mild weather at the beginning and at the end of January, the temperatures for the month were very low.

With conditions remaining unfavourable for arable operations, field work was only possible during the last few days of the month when the ploughing of lea land was undertaken. Ploughing is now considerably in arrear and every opportunity offered during this month will need to be taken advantage of if it is to be completed before sowing and planting time arrives. The cutting of hedges, cleaning of ditches and the making of drains occupied farmers' time when other outdoor work was not practicable, but in this respect it may be stated that during the period when snow was on the ground farmers were fully occupied in attending to livestock, and particularly sheep in mountainous areas.

Outlying cattle received hand feeding on a liberal scale, and in many instances the number of cattle being stall fed is larger than usual. With the exception of outlying stores which have lost condition during the past month, the position in regard to cattle in general is satisfactory.

There was a considerable drain on stocks of home-grown foodstuffs during the past month, and, although it is generally agreed that supplies at farms are still ample for normal requirements, it is felt that a recurrence of arctic conditions would endanger the supply situation as far as home-grown foodstuffs are concerned. On the other hand, plentiful supplies of concentrates were available throughout the month at reasonable rates.

In general it may be stated that the farming community had many difficulties to contend with during the past month. Not alone were farmers hampered in seasonal operations by the frosts and snow, but in many areas transport was held up for several days on account of the roads being made impassable by snowdrifts.

THE CROPS.

WHEAT.—The sowing of winter wheat has been curtailed to a considerable extent, and the acreage laid down under this crop so far is much smaller than at the corresponding date last year.

The threshing of last year's crop was retarded by the weather, and only small quantities were sold during January. The prices paid by authorised merchants ranged from 5/6 to 6/6 per cwt.

OATS.—The threshing of the oat crop also was delayed by adverse weather conditions, and supplies at markets were further restricted on this account, and as a result of frost and snow-bound roads. Supplies of white oats at markets during January were slightly larger than for December and prices were a little easier on the month at an average of 5/2½ per cwt. The range of prices of this commodity during the month was from 4/8 to 6/- per cwt.

BARLEY.—Practically all of this crop has been threshed with satisfactory results. Most of the grain is being retained for use on the farms, but small lots of good quality barley are reported to have been sold during the month at prices ranging from 5/6 to 6/6 per cwt.

FLAX.—Scutching operations have been well advanced and good yields continue to be reported, but there is still a certain amount of irregularity in the yields and quality; this has been attributed to the shortage of water for retting operations last summer.

Increased supplies of flax were marketed last month as compared with December and prices rose slightly up to the middle of January and then declined. Taken over the whole month the average price was 9/- per stone as against 9/1 per stone in December. The range of prices during January was from 6/6 to 10/6 per stone.

POTATOES.—The tubers are keeping reasonably well in houses and in pits, and are being marketed in a good saleable condition. In a few low-lying areas flooding has caused rotting, chiefly amongst the white varieties, but the losses on this account are not expected to be above the normal.

Considerably larger supplies of potatoes were marketed for local consumption during January, as compared with the previous month, and the average price for the month showed an appreciable improvement at 4/2½ per cwt. as against 3/6 per cwt. in December. The following figures show the trend of prices per cwt. at markets during the past six weeks :—

Week ended :—	Main Crop all Classes.		Arran Victory.		Kerr's Pink.	
	s.	d.	s.	d.	s.	d.
4th January, 1936 ..	4	0	4	0	4	0
11th " ..	4	0	4	2	4	1½
18th " ..	4	3½	4	4	4	3
25th " ..	5	0¾	5	0½	5	3
1st February, 1936	4	5	4	5¾	4	6
8th " ..	4	7	4	8	4	9½

Shipments of potatoes from Northern Ireland ports to Great Britain continued on a much larger scale than a year ago as the following figures illustrate :—

Week ended :—	Tons.		Tons.
4th January, 1936 ..	6,470	Corresponding week, 1935 ..	2,551
11th " ..	5,255	" " ..	3,349
18th " ..	7,233	" " ..	4,228
25th " ..	5,734	" " ..	2,821
1st February, 1936 ..	6,539	" " ..	2,340
8th " ..	5,627	" " ..	3,047

There was a further general improvement in the prices received by the growers from shipping merchants during the past month and for the week ended 25th January top prices exceeded £5 per ton. Latterly, however, prices have cheapened a little, but they are still selling at high levels. The following were the prices per ton paid during the week ended 8th February :—

	Bagged.						Loose.					
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Up-to-Date (Red Soil)	4	0	0	to 4	15	0	3	15	0	to 4	5	0
Up-to-Date (Grey Soil)	3	10	0	to 4	10	0	3	10	0	to 4	0	0
Arran Consul	4	0	0	to 4	10	0	3	15	0	to 4	5	0
Arran Victory ..	3	10	0	to 4	10	0	3	5	0	to 4	5	0
Kerr's Pink	3	12	6	to 4	5	0	3	10	0	to 4	0	0

MANGELS.—This crop, which gave a good yield, as will be observed from the return on page 8, is keeping well in store and very little has been used as yet.

TURNIPS.—Turnips also yielded well as will be seen from the return on the extent of produce printed on page 8. The roots are keeping well in most areas and good supplies are still available on most farms.

HAY.—This crop has had to be used for feeding on a larger scale than usual during January, and a shortage may be experienced in some districts should further severe weather supervene. Very good quality hay is generally available at markets and supplies in January were larger than in December. With the increased demand resulting from the general lack of grazing during the snow period prices rose sharply during the month and averaged 59/6 per ton for first and second years' (upland) hay, as against 56/- per ton in December, and 52/9 per ton in November, whilst meadow hay averaged 46/3 per ton in January as against 42/1 per ton in December and 40/1 per ton in November, 1935.

GRASS SEEDS.—Decreasing supplies were marketed during the past month and prices were little changed since December at 11/7½ per cwt. for Italian, 14/2 per cwt. for Perennial, and 9/3½ per cwt. for mixed grass-seed.

LIVE STOCK.

CATTLE.—During the very severe weather, stock owners were obliged to hand feed stores on a much more liberal scale than usual. By this means the general condition of stores has been maintained, but outliers, in most instances, have lost condition during the month. It is also reported that the number of cattle being stall fed was increased on account of the severe weather.

Dairy cattle are in a normal healthy condition and, on the whole, the milk yield has not declined to any appreciable extent during January.

Supplies of cattle at fairs were limited during the period of frosts and snow, chiefly on account of road conditions, but, as these improved, the offerings assumed larger proportions. Trade for stores was generally better on the month with fat cattle prices showing a firmer tendency. Good dairy cattle also sold readily at late rates.

SHEEP.—Sheep suffered from the effects of the weather, but the condition and health of the flocks generally is satisfactory having regard to all the circumstances. There have been a few cases of foot-rot, but no serious outbreaks of disease. Hand feeding had to be carried out in most areas, but in mountainous districts this work was made extremely difficult by snowdrifts which were responsible for the deaths of several sheep through smothering.

Lambing commenced during January under these very trying conditions, and farmers were put to considerable trouble in bringing in the ewes and lambs to shelter. Despite these conditions the results so far are satisfactory.

Small supplies of sheep at fairs were a steady trade, and sheep fit for slaughter met with a ready sale at recent satisfactory prices.

PIGS.—The number of young pigs at fairs held during January was slightly larger than for the previous month, and prices were little changed, the average for January being 30/1 per head as compared with 30/7 per head for December. Good supplies of breeding sows were in fairly good request, and those of the right type found purchasers at prices varying between £5 and £12 per head. First litter sows were quoted at from £8 to £10 per head, and second and third litter animals at from £9 to £12 per head.

HORSES.—There has been a very keen demand for good young horses, and with smaller numbers available prices finished firmer on the month. The best farming and draught horses were selling at from £35 to £60 each, whilst second-class animals were fetching from £25 to £30 each.

MILK.—In some districts supplies available to creameries were smaller than of late, whereas in others, larger supplies were delivered during January. This variation of supplies throughout the country was attributable to the weather, and was reflected in the range of

prices paid by creameries which was wider than usual. During January creameries paid from $3\frac{1}{2}$ d. to 6d. per gallon for milk delivered, the separated milk being returned to the farmer.

The average price paid during the month of December for the milk produced in Northern Ireland and delivered to creameries for manufacturing purposes was 5.3d. per gallon, and the Ministry has made equalisation payments at 0.7d. per gallon in order to bring the average price in respect of this month to 6d. per gallon as provided by the Milk and Milk Products Act (Northern Ireland), 1934. It should be noted that, under the Regulations, creameries are required to distribute the equalisation payments in accordance with the butter-fat content of the milk received from each supplier. Farmers should, therefore, bear in mind that the milk payments made to them, being calculated on a butter-fat basis, may be at a rate per gallon which may vary below or above this average figure.

THE MARKETS DURING JANUARY.

With the exception of cauliflowers and carrots, supplies of the principal vegetables marketed during January were larger than in the previous month. Cabbage at Belfast markets were in slightly larger supply, but cauliflowers were not quite so plentiful as in December. Cabbage and cauliflowers were unchanged in price at $1\frac{1}{5}$ per dozen and $2\frac{1}{6}$ per dozen, respectively, whilst savoys were $3\frac{1}{2}$ d. dearer at $1\frac{1}{6}\frac{1}{2}$ per dozen, leeks 2d. dearer at 8d. per bunch, parsley $2\frac{1}{2}$ d. dearer at 10d. per bunch, carrots 7d. dearer at $10\frac{1}{8}$ per cwt., and parsnips 2d. dearer at $5\frac{1}{6}$ per cwt. Garden turnips were 1d. cheaper at $1\frac{1}{5}$ per cwt.

Farmers' butter was more plentiful than in December. The print variety was unchanged in price at $1\frac{1}{3}\frac{1}{4}$ per lb., and lump butter was $\frac{1}{2}$ d. cheaper at $1\frac{1}{10}\frac{1}{4}$ per lb. There were considerably larger supplies of hen eggs marketed in January as compared with December, and duck eggs also were more plentiful last month. Hen eggs were $3\frac{1}{2}$ d. cheaper at $9\frac{1}{2}$ d. per lb., but duck eggs were $\frac{1}{2}$ d. dearer at $14\frac{1}{2}\frac{1}{2}$ per 120. There was a marked decrease in the numbers of poultry at markets, and prices were easier. Hens were 2d. cheaper at $1\frac{1}{7}\frac{1}{4}$ each, chickens $\frac{1}{2}$ d. cheaper at $2\frac{1}{5}\frac{1}{2}$ each, while ducks were $2\frac{1}{2}$ d. cheaper at $2\frac{1}{14}$ each. Small supplies of wool were marketed at unchanged prices of 5d. per lb. for long unwashed wool and $4\frac{1}{2}$ d. per lb. for mountain unwashed wool.

THE COST OF LIVING INDEX FIGURE.

At 1st January, 1936, the cost of living index figure was 47, or the same as that for the previous month. The figure at 1st January, 1935, was 43.

AGRICULTURAL PRICES.

The following table shows the average prices of agricultural commodities in Northern Ireland during the three months ended 31st December, 1935, together with comparative figures for the same period in 1934 and the average prices ruling during the fourth quarter of the years 1911-13 :—

Commodity.	Quarter ended 31st December.			Percentage increase or decrease in price as compared with the corresponding period, 1911-13.	
	Northern Ireland.		Ulster.	4th Qtr. 1935.	4th Qtr. 1934.
	1935.	1934.	1911-13.		
Oats (White) per cwt.	£ s. d. 0 5 2	£ s. d. 0 5 6	£ s. d. 0 6 6	— 20.51	—15.4
Potatoes "	0 2 9	0 2 8½	0 2 9	—	— .01
Hay, Clover "	0 2 7½	0 2 9	0 3 5	— 22.56	—19.5
" Meadow "	0 2 0	0 2 1½	0 3 3	— 38.46	—34.6
Grass Seed, Italian "	0 11 5½	1 2 1	0 14 11	— 23.32	+48.0
" Perennial "	0 13 1	0 19 0	0 11 2	+ 17.16	+79.1
" Mixed "	0 9 1	0 18 6½	0 11 5½	— 20.58	+61.9
Flax per stone	0 9 2½	0 9 0	0 7 7½	+ 20.44	+17.7
Calves (Young) per head	1 5 0	1 8 2	1 14 1	— 26.65	—17.4
Store Cattle, 6-12 months .. "	5 14 2	5 13 0	4 14 0	+ 21.45	+20.2
" " 1-2 years "	7 14 10	8 1 8	7 7 9	+ 4.79	+ 9.4
" " 2-3 years "	9 16 9	10 10 9	10 2 2	— 2.68	+ 4.2
Fat Cattle, 2-3 years "	12 13 5	13 7 9	13 11 0	— 6.49	— 1.2
" " Cows and Bulls "	10 5 8	10 1 7	12 13 2	— 18.76	—20.3
Springers (Cows and Heifers) .. "	15 1 7	14 16 10	14 19 5	+ .72	— .9
Milch Cows (down calved) .. "	14 2 0	13 17 2	13 15 8	+ 2.30	+ .5
Lambs (under 12 months) .. "	1 0 4	1 3 5	1 6 5	— 23.03	—11.4
Store Sheep "	—	—	1 12 1	—	—
Wethers "	0 16 11	0 19 6	—	—	—
Breeding Ewes "	1 9 0	1 10 6	—	—	—
Fat Sheep, 1-2 years "	—	1 1 0	1 17 5	—	—43.9
" over 2 years "	1 10 8	1 10 11	1 18 3	— 19.83	—19.2
Sows for breeding "	7 3 2	6 13 3½	5 9 5	+ 30.84	+21.8
Young pigs, 8-10 weeks old .. "	1 11 2	1 7 9	1 6 2	+ 19.11	+ 6.0
Pork per cwt.	2 13 4	2 16 1	2 12 10	+ 1.52	+9.90
Butter, Farmers' "	6 1 4	4 7 10	5 5 6	+ 15.01	— 8.3
Hen Eggs per lb.	0 1 0½	0 0 11	+0 13 11	—	—

† All Ireland price per 120.

The prices of crop products during the last quarter of 1935 were, with two exceptions, lower than for the corresponding quarter of 1934 and below the averages shown for the pre-war period. Potatoes, which improved in value during the quarter and at the end of the year were selling at higher rates than for some years past, are shown to have been maintained at the pre-war price level, whilst flax was a little dearer than a year ago and slightly more than 20% dearer than before the war. Against these slight gains there are losses, the most noticeable being in the grass seed sections, where prices were appreciably lower than the high levels recorded for 1934. In comparison

with pre-war quotations, however, the position is less unsatisfactory, since the principal variety, perennial, was selling at higher prices last quarter, although Italian and mixed seeds were cheaper.

Live stock prices, on the whole, were little changed from the 1934 levels, although here again it is disappointing to note that, in the main, movements were mostly downwards. Young calves, stores over 1 year old, and fat cattle, 2-3 years, were a little cheaper on the year, whilst store cattle, under 12 months old, fat cows and bulls, and the two classes of dairy cattle were selling at firmer rates than during the 4th quarter of 1934. Young stores, 6-12 months old, were selling well above their pre-war value, whilst stores of from 1-2 years were about 7/- per head or 4.79% dearer. The prices of springers and milch cows for the last 3 months of 1935 advanced a little beyond the 1911-13 quotations. It should be remembered that if the Cattle Subsidy were taken into consideration the prices obtained for fat cattle would be higher than before the war. Sheep and lambs last quarter were slightly cheaper than in 1934. Sows for breeding and young pigs provide the bright features of the return, and prices last quarter were higher than in 1934 and 1911-13. Pork was selling at slightly lower prices during October, November, and December of 1935 than in the corresponding months of 1934, but still remained a little dearer than before the war. Farmers' butter and egg prices also gave some cause for satisfaction, the former in particular, which reflects to some extent the improvement brought about in the dairy industry by the Milk and Milk Products Act.

EXTENT AND PRODUCE OF THE TURNIP AND MANGEL CROPS IN NORTHERN IRELAND, 1935.

The estimated average yield of the turnip crop in Northern Ireland in 1935 is 17.3 tons per statute acre, as against 14.4 tons in 1934, and 17.4 tons in the decennial period 1925-1934. The estimated average yield of the mangel crop in 1935 is 17.6 tons, as against 17.0 tons in 1934 and 16.8 tons in the decennial period 1925-1934.

The following table shows the estimated extent, total produce and average yield per statute acre of the turnip and mangel crops in 1935, with comparative figures for 1934 and the ten years period 1925-1934.

Year.	TURNIPS.			MANGELS.		
	Total acreage.	Total produce.	Average yield per Statute acre.	Total acreage.	Total produce.	Average yield per Statute acre.
	Acres.	Tons.	Tons.	Acres.	Tons.	Tons.
1935	33,358	578,356	17.3	995	17,517	17.6
1934	35,960	517,557	14.4	1,053	17,901	17.0
Average for the ten years period 1925-1934 ..	40,551	710,412	17.4	1,093	18,437	16.8

HINTS TO MILK PRODUCERS

Wireless talk given by H. O'H. O'Neill on Friday, January 31st, reproduced through the courtesy of the British Broadcasting Corporation.

This talk is intended for milk producers. I know that some of you have had difficulties, and my object is to try and help you to overcome them.

Now, one of your chief difficulties is to maintain the standard of quality prescribed under the Act. Sometimes, I find that for some reason the quality of the milk falls below the standard, although, perhaps, up till then the quality was satisfactory. When this happens, I have invariably found that the cause is due to neglect or carelessness regarding some small detail in the routine work, and I want to discuss those details which I find are most frequently neglected, and to offer hints for your guidance in the future.

I wish to emphasise, particularly, the importance of strict cleanliness in the byre and dairy. A byre, dairy and equipment of the most up-to-date type will not ensure success if the elementary essentials of keeping them clean are neglected. Many farmers, though having ideal premises and equipment, fail to produce milk of good quality, while others, who do not possess the same facilities, succeed for the simple reason that they appreciate the importance of cleanliness.

Personal supervision is an important factor in the production of clean milk, but it is one which many farmers, unfortunately, overlook. Lack of supervision often leads to careless work by employees, and poor results follow. Naturally, the farmer who performs most of the work himself, or with the aid of his family, can better appreciate the value of clean methods than one who is depending on paid labour. Accordingly, where a number of hands are employed, it is essential that the supervision should be constant and thorough, as any small slip on the part of an employee may lead to a serious deterioration in the quality of the milk.

I am glad to note that most producers now realise the advantage of clipping the hind-quarters and flanks of the cows at regular intervals. If clipping is carried out about once every six weeks it helps to keep the animals clean and is of assistance to workers in preparing cows for milking. The manure should always be removed from the byre and the litter pushed up towards the cows' forefeet before milking begins.

Although most producers now clean and wash the cows' udders and flanks before milking, this operation is not always properly carried out. The use of one bucket of water only for cleaning is not enough.

The water soon becomes dirty, and little benefit results from the washing. It is much better to have two sets of buckets and udder cloths, one lot being reserved for removing any visible dirt on the udders, and the other for the final cleaning. A careful worker will always notice if any cow is particularly dirty, and will repeat the cleansing operation where necessary. As a general rule, it is best to change the water in the buckets after not more than four cows have been cleansed.

One of the commonest sources of trouble arises from failure to reject the first few streams of milk from each teat. This portion of the milk usually contains dirt, and should not be included with the rest of the milk. But I have noticed that the first streams are often milked on to the ground. Now, this is a very objectionable practice, which may lead to other troubles later. This milk should be collected in a tin and used only for feeding to stock. A very good system to adopt is the use of a special tin which is provided with a false lid. Workers using this type of tin are then able to detect udder trouble in its early stages by noticing traces of blood or curd on the false lid.

I would advise you all to provide overalls for your milkers. Suitable one-piece types of overalls, which can be worn over working clothes, can easily be made at home.

There is one very bad habit which most frequently leads to milk of poor keeping quality being produced, and that is milking with wet hands. This practice is quite common amongst certain producers and their employees, and it cannot be condemned too strongly. I would impress upon all of you, as firmly as I can, the necessity for making certain that your workers milk with dry hands. At the same time, I want to emphasise the importance of washing the hands before milking, and of rinsing them after milking each cow. A small wash basin and a clean towel should be provided for the purpose. Running water from a tap is most suitable for rinsing the hands.

Hooded milking pails are a definite aid to clean milk production, as the partial covering tends to prevent any loose hairs or dirt sticking to the cows' flanks from getting into the milk. These pails, and, I might add, all dairy utensils, are best made of the one-piece, seamless type, as they are much easier to clean. The general dislike that most workers have at first of this type of milking pail can be easily overcome if they persevere in using them.

I want also to warn you against using milking pails for other purposes than the holding of milk. I have found cases where the pails used for milking are also used for feeding calves, mixing food, etc., and it should be obvious that such practices cannot give good results. Dairy utensils should be kept *solely* for milk and not be used for any other purpose.

Here let me mention another point to bear in mind if you want to produce good quality milk. Don't allow milk to remain in the byre for some time after milking. Many people do this, and then empty and strain it into a *can* placed in the back passage of the byre or outside the byre door. When this is done, very often you find traces of manure in the milk or adhering to the utensils. I should recommend you to carry milk in the pails direct to the dairy, immediately after milking.

Unsatisfactory strainers may also cause trouble. Under ideal conditions, milk should not contain any visible dirt, and straining is merely carried out as a safeguard. I would advise in all cases the use of the modern type of strainer, which is provided with a sterile cotton wool filter pad. The old type of cloth strainer often leads to trouble owing to faulty scalding or sterilisation, and should not be used.

To ensure efficient sterilisation of utensils, a reliable thermometer should be fitted to the sterilising chest. Steam should be turned on slowly and the temperature brought up to 210° F., and the contents of the chest maintained at that temperature for at least 20, or, better still, 30 minutes. After sterilisation, the door of the sterilising chest should be opened slightly for a few minutes to allow excess steam to escape, and then closed again. The utensils should not be removed from the sterilising chest until they are wanted again.

With the increase in the sale of bottled milk, I have recently received a number of complaints regarding irregular cream line in the bottles of milk. This difficulty can be overcome by making sure that the milk of a number of cows is mixed in the receiving pan of the cooler, before cooling and bottling.

Many retailers and consumers grumble about pitting or chipping on the sides and necks of milk bottles. Investigation has shown that this trouble is mainly caused by rough usage. If bottles are constantly knocked against each other or against any hard surface, it will cause the glass to weaken at the point of contact. This may not be noticeable at first, but the damage is made worse by sterilisation, and very soon the bottles look unsightly and become unfit for use. I advise you, therefore, to exercise care in handling and washing bottles, and throw away all unsuitable bottles at once.

Another common cause of milk being of poor keeping quality is inefficient cooling. During warm weather, I have often found that this is due to the cistern in the dairy being allowed to remain full overnight. If cooling water cannot be pumped to the cistern during the cooling operation, pumping should take place immediately before starting to cool the milk. Remember that you won't get efficient cooling by merely turning on the tap from the receiving pan. The milk should be spread evenly over the surface of the cooler, and the

flow of the milk over the cooler adjusted to get the best results. The temperature should be checked regularly with a proper dairy thermometer. If the cooling is done well, it should be possible to cool milk to within a few degrees of the temperature of the cooling water.

Certain troubles have also arisen in handling milk after production. During warm weather I would advise you to store the milk in a cool place until ready for delivery. In the summer months, milk churns should not be left for any length of time uncovered at the collecting points. In the case of creamery producers, where milk has to be mixed before delivery, I want to stress the point that on no account should warm milk be mixed with cold from a previous milking. This is often the cause of an unsatisfactory supply on arrival at the creamery. Warm milk should always be cooled before adding it to cold milk.

Again, I have found that poor quality milk is often delivered because of faulty scalding or sterilising of milk utensils, bottles, cans, etc. Regarding bottled milk, consumers should remember that they will greatly assist dairymen in their efforts to provide a satisfactory supply of milk, if they rinse the bottles with cold water before returning them to the milkman. Producer-wholesalers should in all cases wash, and scald or sterilise, churns returned to them by distributors before using them again. This should be done even where it is the custom to wash and sterilise churns at the distributor's premises.

Finally, may I say that if any of you have any difficulty in connection with milk production, the Ministry will be very glad to help you by giving advice and instruction. Requests for such advice should be made to the Ministry of Agriculture, Stormont, Belfast.

MARKETING NOTES AND MEMORANDA.

IMPORTS OF AGRICULTURAL PRODUCE INTO THE UNITED KINGDOM, 1935.

Provisional figures for 1935, published in the December, 1935, Trade Accounts of the United Kingdom, showing the imports of agricultural produce in 1935 as compared with imports in 1934 are set out in the following table.

IMPORTS OF AGRICULTURAL PRODUCE.

Commodity.	1935.			1934.			Annual Average, 1930-34.
	From British Countries	From Foreign Countries	Total.	From British Countries	From Foreign Countries	Total.	
	Tons	Tons	Tons	Tons	Tons	Tons	Tons
Wheat ..	2,738,000	2,323,000	5,061,000	2,877,000	2,254,000	5,131,000	5,449,000
Wheat Flour ..	302,000	97,000	399,000	308,000	164,000	472,000	503,000
Barley ..	150,500	704,500	855,000	115,000	659,000	774,000	724,000
Oats ..	177,500	500	178,000	98,000	63,000	161,000	337,000
Maize ..	208,000	2,767,000	2,975,000	84,000	2,984,000	3,068,000	2,529,000
*Chilled Beef	24,000	400,000	424,000	12,000	401,000	413,000	436,000
*Frozen Beef	112,000	37,000	149,000	131,000	39,000	170,000	141,000
*Frozen Mutton & Lamb	271,000	64,000	335,000	259,000	65,000	324,000	336,000
*Bacon ..	69,000	277,000	346,000	63,000	317,000	380,000	484,000
*Hams ..	11,000	23,000	34,000	9,700	26,700	36,400	42,000
Fresh Pork ..	7,150	—	7,150	7,200	—	7,200	12,700
*Frozen Pork	32,000	14,000	46,000	26,000	29,000	55,000	28,000
Poultry, dead	6,650	14,450	21,100	7,800	14,800	22,600	27,000
Butter ..	272,000	208,000	480,000	264,000	221,000	485,000	418,000
Cheese ..	120,000	16,000	136,000	136,500	12,500	149,000	150,000
*Condensed Milk :							
Sweetened—							
Whole ..	—	—	4,400	—	—	6,150	9,300
Separated	3,000	67,000	70,000	3,000	78,000	81,000	97,000
Unsweetened	6,900	7,800	14,700	6,500	10,600	17,100	20,000
Cereal By-products ..	—	—	870,000	—	—	934,000	655,000
Oilseed Cakes	—	—	570,000	—	—	557,000	456,000
*Potatoes ..	95,000	96,000	191,000	70,000	84,000	154,000	450,000
	Gt. Hds.	Gt. Hds.	Gt. Hds.	Gt. Hds.	Gt. Hds.	Gt. Hds.	Gt. Hds.
*Eggs, in shell	4,822,500	14,956,500	19,779,000	5,803,000	12,931,000	18,734,000	21,924,000

*These commodities are subject to quantitative regulation.

Particularly interesting to Northern Ireland producers is the decline in the imports of meat since 1934. Imports of bacon (346,000 tons) decreased by 9 per cent. on 1934 and were the smallest since 1922. Notable in the general decrease of supplies from foreign sources is the

decrease of 11 per cent. in imports from Denmark (191,000 tons), and of 15 per cent. in the imports from the Netherlands. Canadian and Irish Free State supplies increased from 45,000 tons to 46,000 tons and from 18,000 tons to 23,000 tons, respectively. The total import of hams fell from 36,400 tons to 34,000 tons, supplies from the United States being reduced by over 12 per cent. to 21,000 tons. In 1935 the Irish Free State exported to the United Kingdom 1,000 tons of ham, as compared with 650 tons in 1934, and 7,150 tons of fresh pork, as compared with 7,200 tons in 1934. Of other classes of meat, the total imports of beef fell slightly from 634,000 tons to 626,000 tons. Imports of frozen mutton and lamb rose on the year by 11,000 tons to 335,000 tons. British countries sent 12,000 tons more than in 1934.

Owing mainly to shorter supplies from the Irish Free State and Hungary, imports of poultry decreased from 22,600 tons to 21,100 tons. Arrivals from "Other British Countries," however, increased by 52 per cent. on 1934 to 1,400 tons.

Eggs in shell show an increase of 6 per cent. in the total arrivals, for which Denmark, Poland and the Netherlands were mainly responsible. The Irish Free State (2,395,000 gt. hds.) sent 13 per cent. less than in 1935.

Imports of potatoes increased by 24 per cent. to 191,000 tons from 154,000 tons in 1934. The Channel Islands sent 20,000 tons more than in 1934, and the Irish Free State (8,400 tons) 4,700 tons more.¹

DENMARK.

SHORTAGE OF POTATOES IN GREAT BRITAIN LEADS TO PRICE INCREASE IN DENMARK.²

The demand for potatoes in Denmark has increased lately, and prices have been firmer. This sudden interest on the part of buyers is connected with a recent report that has been published on the English potato harvest, which shows that Great Britain will have to import potatoes during the coming spring.

The potato crop in England and Wales was barely 3 million tons last year; that is well over half a million less than in 1934. Up to the end of last year British imports of potatoes were greatly reduced

¹. Agricultural Market Report.

². Market Supply Committee Overseas Intelligence Note.

Among the Danish potato growers it is the general opinion that the growers of Jutland will profit by this state of affairs. The stock of good potatoes is not very large this year, since part of the crop has been attacked by mould. If Jutland makes a bold bid for the export trade to England, exports from Jutland to other parts of Denmark will fall and potato prices are sure to rise in the spring.

The mere hint of there being a chance of large exports to England has caused potato prices in some parts of Denmark to increase by 8 to 10 kroner (7/- to 9/-) a ton during the last few days, and further advances will doubtless follow.

THE MARKETING OF NETHERLANDS BUTTER IN GREAT BRITAIN.³

Two articles which have recently appeared, respectively, in the Dutch newspaper "De Telegraaf" and the Swiss newspaper "Neue Zürcher Zeitung," criticising the methods of marketing Netherlands butter in Great Britain, are interesting, in that they give support to the Ministry's argument that countries which sell their produce in the British market can only achieve remunerative prices if they organize their export trade and present the kind of product which the British housewife wants and in a form which is attractive to her. The gist of the first article is as follows :—

While Netherlands butter, it is claimed, is of better quality than butter from Denmark and from the Dominions, it fetches a price which is considerably lower than any of these varieties. Danish butter was recently quoted at 123/- to 124/- per cwt., and Australian and New Zealand butter from 108/- to 110/-; Dutch butter, on the other hand, officially quoted at 107/- to 109/-, was actually selling at as low a price as 102/- to 104/- per cwt. It is pointed out that the gap between the price of Danish and the price of Dutch butter is due to the fact that the Danes have laid themselves out, as they did with bacon, to make their butter answer the wishes of the British public and to secure a regular supply of Danish butter on to the British market. Dutch butter, on the other hand, is not only of softer texture than is liked by the British consumer, but is also irregular in supply. Though Dutch butter exporters have attempted to keep pace with marketing progress by agreeing a price at which butter may be sold to importers, in practice their butter is offered on the British market under the official export price. The general practice of price cutting and the unloading of supplies by speculators on the market when prices show a tendency to rise impede any improvement in the price

³. Based on Market Supply Committee Overseas Intelligence Note.

level for Dutch butter and the establishment of a good reputation in Great Britain for this variety. The only way in which the Netherlands can improve their position in the British market is to regulate supplies by concentrating the import of butter into Great Britain in the hands of the few reliable agents who would watch the price in London in conjunction with the current market position.

In conclusion, it is pointed out that it should be remembered that no matter how good Netherlands butter is, the English housewife does not know it and will never know it so long as the marketing of Dutch butter in England is not properly organised.

Dealing with agricultural policy in the Netherlands, the second article discusses ways of meeting the present agricultural depression. One way out, it suggests, lies in an improvement in export methods. Since England is still by no means self-supporting, there is a large market for finished agricultural products such as butter, eggs, bacon and vegetables. In the case of butter, particularly, the Netherlands has failed to adopt the right export methods. Because the export of Dutch butter to England is not centralised and no regulations have been made as to quality, packing and methods of delivery, prices of Dutch butter are far below those of the Danish product and at times below those of Australian and New Zealand and East European produce.

PIG CONTRACTS.—Attention has recently been centred upon one of the difficulties encountered in the operation of the Great Britain Pigs Marketing Scheme, viz., the difficulty of getting producers to contract for the supply of sufficient pigs to curers during 1936 and of securing that contracts are fairly evenly distributed among curers. In Great Britain, unlike Northern Ireland, contracts form one of the main planks in the Scheme. A producer is asked to contract with a curer for monthly deliveries of specified numbers and classes of bacon pigs throughout a calendar year. During 1934 and 1935 farmers were dissatisfied at the relatively poor prices obtained by them for bacon pigs sold on contract as compared with the prices ruling in the pork market, i.e. the market for pigs to be sold as fresh pork. Under the Great Britain Scheme the normal position is that pigs may only be sold for curing under contract, and that these pigs are to count for home production of bacon in arriving at the total amount of imports of bacon into the United Kingdom that should be allowed during the year. It should be emphasised that in the Pigs Marketing Scheme for Northern Ireland, which was specially framed to suit local conditions, contracts are not compulsory, but those producers who can complete contracts for the monthly delivery of live Wiltshire pigs over a three months period are guaranteed a certain premium over the current standard price for dead pigs.

AGRICULTURAL MARKETING (PIG INDUSTRY) ACT (N.I.), 1934.

PIG PRICES FOR FEBRUARY, 1936.

The Pig Industry Council for Northern Ireland have announced the following prices for dead pigs for sale by producers to curers in Northern Ireland in February, 1936 :—

PRICE PER DEAD CWT.

Weight Class. (Dead Weight).	Grade A.	Grade B.	Grade C.	U.L. or U.F.
I. c.1 1q. 14lb. to c.1 2q. 14lb. . .	60/10	57/10	54/10	51/10
II. c.1 2q. 15lb. to c.1 3q. 14lb. . .	60/10	57/10	54/10	51/10
III. c.1 3q. 15lb. to c.2 0q. 0lb. . .	57/10	54/10	51/10	48/10
IV. c.2 0q. 1lb. to c.2 0q. 14lb. . .	51/10	48/10	45/10	42/10

U.L.=Under Grade A measurements. U.F.=Over Grade C. measurements.

The price for partly black pigs between c.1.1.14 and c.2.0.14 will be 5/- per cwt. below the relevant grade price.

Authorised cuts :—

- Broken ham (dry, shank and/or shell bone break)—5% of the gross value of the carcase.
- Broken ham (wet break)—12½% of the gross value of the carcase.
- Shoulder-stuck carcase—3/- per shoulder affected.

The gross value of a carcase is the product of the dead weight and the relevant grade or other price per cwt.

Where portion of a pig carcase weighing between c.1.1.14 and c.2.0.14 is condemned and the existence of disease could not reasonably have been known to the producer at the time of slaughter, the appropriate grade price shall apply. If the carcase is wholly condemned on account of disease, the existence of which could not reasonably have been known to the producer at the time of slaughter, the relevant Grade B price shall apply.

The foregoing prices do not apply in the case of (a) wholly black pigs, boars, rigs or stags, sucked sows, and pig carcases weighing

under c.1.1.14 or over c.2.0.14, and (b) pigs visibly diagnosable as diseased before slaughter and subsequently condemned; emaciated or screw pigs; smelling pig carcasses with definite indications of putrefaction, and pig carcasses badly abused or damaged before being handed over by the producer to the curer.

PRICES FOR WILTSHIRE PIGS SOLD ON DIRECT CONTRACT.

In the case of pigs sold alive under direct contract to Wiltshire curers, the prices per dead cwt. payable for graded pigs delivered in respect of the month of February are as follows:—

Weight Class. (Dead Weight).	Grade 1.	Grade 2.	Grade 3.
Under c.1 0q. 14lb.	54/10	54/10	54/10
c.1 0q. 14lb. to c.1 2q. 7lb.	66/10	62/10	58/10
c.1 2q. 8lb. to c.1 2q. 10lb.	63/10	59/10	55/10
c.1 2q. 11lb. to c.1 2q. 14lb.	61/10	57/10	53/10
Over c.1 2q. 14lb.	58/10	54/10	50/10

The standard price, exclusive of bonus, for bacon pigs sold by contract in Great Britain during February is 10/8 per score dead weight, equivalent to 59/9 per cwt.

PRICES FOR LIVE PIGS SOLD TO THE PIGS MARKETING BOARD.

The following prices per live cwt. will be paid for live pigs by the Pigs Marketing Board on and from February 1st, 1936, until further notice:—

Weight Class (Live Weight.)	Grade I	Grade II.	Grade III.	Unsuitable.
<i>Wiltshire Weights.</i>				
c.1.2.0 to c.1.3.14 ..	51/-	48/6	46/-	39/6
<i>Shipping Weights.</i>				
c.1.3.15 to c.2.0.0 ..	47/-	44/6		39/6
c.2.0.1 to c.2.1.14 ..	44/6	42/-		39/6
c.2.1.15 to c.2.2.7 ..	42/-	39/6		36/6
c.2.2.8 to c.2.2.21 ..	38/6	36/-		32/6

These prices do not apply to live pigs outside the above weights, to live pigs intended for breeding, live boars, live sucked sows, rigs or stags, injured or diseased pigs, live in-pig gilts, or live pigs sold (on contract registered with the Pig Industry Council) to curers in Northern Ireland. All other live pigs inside these weights can be sold only to the Pigs Marketing Board.

AUTHORISED DEDUCTIONS.

Every pig (dead or alive) sold to a curer or to the Pigs Marketing Board is subject to a levy and contribution at present amounting to 3/6.

In addition to this amount, a deduction not exceeding 6d. per pig may be made in the case of sales to curers to cover insurance, so that the producer will not suffer financial loss if the carcase is condemned as unfit for human consumption.

In the case of pigs sold to the Board, there is a deduction of 2/6 per pig for marketing charges.

COST OF STANDARD PIG RATION.

The average retail cash price per cwt. of the standard ration for the sixteen weeks period ended 18th January, 1936, as calculated by the Ministry, was 7/-. This price was used, together with the realised prices of bacon and hams and of fresh meats over a set period, to determine the standard price of pigs for February.

The ration upon which the feeding cost is based is as follows:—

Barley Meal	..	..	..	30%
Maize Meal	..	..	..	40%
Pollards (White)	..	..	..	20%
Extracted Soya Bean Meal	..	..	..	5%
Meat and Bone Meal (60% Protein)	..	..	..	5%

GRADING STATISTICS.

Table showing the percentages of pig carcasses falling within the weight and grade classes indicated during December, 1935.

GRADE A.				GRADE B.				GRADE C.				TOTAL.
1	2	3	4	1	2	3	4	1	2	3	4	
16.21	14.50	2.84	.63	13.30	17.99	4.16	1.40	4.61	8.59	1.42	.38	86.03

UNGRADED CARCASSES.

Under Grade A. measurements. U.L.	Over Grade C. measurements. U.F.	Wholly condemned. U.	Wholly black injured or damaged. U.	Overweights underweights boars, sows. X.	Partly black. Y.	
.05	2.50	.37	1.37	8.82	.86	13.97
TOTAL						100%

The above figures have been calculated from the purchase and grading statements which the curers furnish to the Ministry. There was a further seasonal decline in the volume of trade during the month of December last, and it was further ascertained from the returns referred to that the average weight of each carcase was 2 lbs. lighter than in November, at 1 cwt. 2 qrs. 17 lbs. Making the necessary deduction for levy and contribution, the average payment for each carcase was £4 6s. 7d., as compared with £4 9s. 1d. in November, and the average price per cwt. was 1/- lower than a month ago, at 52/4.

PIGS MARKETING BOARD.

ELECTION OF MEMBERS FOR THE COUNTIES OF FERMANAGH, LONDONDERRY, AND TYRONE.

Voting papers will be issued on Friday next, the 14th February, to all persons entitled to vote in the above Election, and, in order to count in the Election, must be properly completed and returned so as to reach the Ministry on or before Friday, the 28th February, 1936. New voting papers will only be issued on the receipt of the spoiled paper in the Ministry in time to allow of a new paper being issued and completed and returned so as to reach the Ministry by the 28th February, 1936.

SWINE FEVER (BELFAST) ORDER, 1936.

The above-mentioned Order was made by the Ministry on the 27th January and came into operation on the 1st February. It provides :—

- (1) that swine shall not be kept on premises situated in Belfast unless the owner or person in charge holds a licence for that purpose from the Ministry ;
- (2) that pig keepers in Belfast must keep a record of the number of swine brought on to their premises ; and
- (3) that a pig keeper in Belfast cannot move swine from his premises unless he has obtained a movement permit from an authorised officer of the Ministry.

The Order has been made with a view to obtaining control over the movement of pigs in Belfast so as to prevent any unregulated movement of swine from the city to country districts.

The Order also carries on the provisions of the Swine Fever (Belfast) Order, 1935, which prohibited the sale or exposure for sale of any swine at any public sale in Belfast.

THE CATTLE INDUSTRY (EMERGENCY PROVISIONS) ACTS, 1934 AND 1935.

In the Ministry's report for November, 1935, information was given regarding the working of the cattle subsidy during the first year of its existence, viz., September, 1934, to August, 1935, inclusive, and now it is possible to give some particulars for the first quarter of the second year, embracing the months of September, October and November, 1935.

The numbers of cattle certified in Northern Ireland during this period, compared with those for the corresponding months of 1934, were as follows:—

Month.	Steers.	Heifers.	Cow-heifers.	Total.
September, 1935 ..	8,034	2,804	191	11,029
„ 1934 ..	(5,178)	(1,531)	(114)	(6,823)
October, 1935 ..	10,366	3,408	211	13,985
„ 1934 ..	(5,162)	(1,816)	(139)	(7,117)
November, 1935 ..	7,686	3,171	194	11,051
„ 1934 ..	(4,510)	(1,848)	(140)	(6,498)
Total, 1935 ..	26,086	9,383	596	36,065
„ 1934 ..	(14,850)	(5,195)	(393)	(20,438)

It will be observed that the increase in the number of cattle certified in the three months of 1935 over the figure for the first 3 months of the subsidy was very considerable, amounting to 76.4% or 15,627 animals. A comparison of the totals for the five quarterly periods is also of interest, since it shows that the largest number recorded during the first year of the subsidy was in the spring months

of March, April and May, and that this figure was exceeded during the autumn period of 1935. The figures are given hereunder.

1st year	{	September-November, 1934	20,438
		December, 1934-February, 1935	27,382
		March-May, 1935	32,315
		June-August, 1935	27,653
2nd year		September-November, 1935	36,065

Further to this increase, it should be mentioned that the latest return received shows that for the month of December last the number of cattle certified in Northern Ireland was 11,436, as compared with 6,062 in December, 1934, and that the percentage increases in the numbers of Northern Ireland cattle certified during the months of September, October, November, and December, 1935, compared with the corresponding months in 1934, have been considerably higher than those recorded for any other part of the United Kingdom.

The average weights of the animals certified during the months of September, October, November, 1935, are compared with those recorded for the first year of the subsidy, September, 1934, to August, 1935 in the following table :—

	Sept., Oct., Novr., 1935.			Twelve months, Sept., 1934, to Aug., 1935.		
	C.	qr.	lb.	C.	qr.	lb.
England and Wales ..	9	1	16	9	2	2
Scotland	9	3	7	9	3	8
Northern Ireland ..	8	1	19	8	1	23
United Kingdom ..	9	1	15	9	2	1

In regard to prices of fat cattle during this period under review, it will be remembered that the downward tendency noted during the months of July and August, 1935, became more marked during September, October and November, and that for the latter month the Northern Ireland level was very low. Fortunately, however, December saw a slight improvement in beef values, which has continued up to the present date.

The following are the average prices per live cwt. of all cattle in respect of which payments have been made by the Cattle Committee :—

	England and Wales.						Scotland.						Northern Ireland.						United Kingdom.					
	1936.		1935.		1934.		1936.		1935.		1934.		1936.		1935.		1934.		1936.		1935.		1934.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
January ..	35	2	35	2	—	—	38	0	39	0	—	—	30	9	31	3	—	—	35	5	35	10	—	—
February ..	—	—	33	10	—	—	—	—	37	2	—	—	—	—	30	10	—	—	—	—	34	4	—	—
March ..	—	—	33	5	—	—	—	—	36	1	—	—	—	—	29	10	—	—	—	—	33	9	—	—
April ..	—	—	33	11	—	—	—	—	36	0	—	—	—	—	29	8	—	—	—	—	34	2	—	—
May ..	—	—	35	5	—	—	—	—	37	5	—	—	—	—	30	11	—	—	—	—	35	7	—	—
June ..	—	—	36	7	—	—	—	—	38	11	—	—	—	—	32	4	—	—	—	—	36	10	—	—
July ..	—	—	35	10	—	—	—	—	40	2	—	—	—	—	31	11	—	—	—	—	36	6	—	—
August ..	—	—	33	11	—	—	—	—	37	7	—	—	—	—	31	0	—	—	—	—	34	6	—	—
September ..	—	—	33	4	37	0	—	—	36	4	40	10	—	—	29	4	33	7	—	—	33	8	37	9
October ..	—	—	32	8	34	10	—	—	35	7	38	11	—	—	28	2	31	3	—	—	32	11	35	7
November ..	—	—	32	5	33	9	—	—	36	6	38	8	—	—	27	7	30	1	—	—	32	9	34	7
December ..	—	—	35	0	35	5	—	—	38	2	39	7	—	—	28	10	30	10	—	—	35	3	36	0

According to statistics just received from the Cattle Committee, the total amount of payments from the Cattle Fund to Northern Ireland owners up to and including 1st February was £340,304 7s. 6d., and this amount is approximately 6½% of £5,033,204 1s. 3d., the total payment made from the fund to all owners in the United Kingdom in respect of cattle sold on a live weight basis. The total number of animals involved in the payments to Northern Ireland owners was 161,073, and the average price per head was £2 2s. 3d., as against £2 7s. 6d. per head for the 2,118,680 animals for the whole of the United Kingdom.

During the week ended 1st February, payments to Northern Ireland owners were in respect of 1,448 steers, 569 heifers, and 51 cow-heifers of a total weight of 17,252 cwt. and a total realised value of £26,670 9s. 0d. The average price was £12 18s. per head or 30/11 per live cwt. The average weight of each beast was 8 cwt. 1 qr. 10 lb., and the average subsidy obtained for each animal was £2 1s. 8d.

THE WARBLE FLY PEST.

COMPULSORY DRESSING REQUIRED.

Ulster farmers do not need to be told about the ravages of the warble fly, which lays its eggs during June and July, and, directly and indirectly, costs the agricultural community hundreds of thousands of pounds annually. A representative of a prominent tanning firm stated last month that nearly half of the hides shipped across Channel from April to July were badly warbled, with a consequent depreciation of about 5/- per hide, and it has been frequently pointed out that the losses incurred on every warbled carcase amount to almost as much as the bounty paid on fat cattle under the Beef Subsidy Scheme.

Until recently no inexpensive and simple treatment was known for the eradication of warbles. Careful experiments have now shown, however, that if cattle are dressed at monthly intervals with a Derris preparation during the period when the warble maggots appear in the backs of the cattle, a one hundred per cent. kill is obtained. The Ministry has, accordingly, judged the time ripe for making the dressing of warbled cattle compulsory throughout Northern Ireland, so that by a mass attack the pest may be eradicated from the country in a few years.

The reason for this new Order is not, however, simply the desire to do away with a harmful and costly pest ; there are other considerations which make it impossible for the Ministry to act otherwise. Both the British and Free State authorities have made a similar Order, and not to follow suit, even were the choice possible, would have been fatal to the interests of our live stock industry. For, just as it has been impossible since December last to dispose of privately ear-marked animals profitably across Channel, so, in time, all warbled animals will likewise become a drug on the market, when the butchers and tanners find that there is a plentiful supply of uninfested cattle. Indeed, it is likely that in a year or two the exposure for sale of warbled cattle will be prohibited, and farmers who do not treat their animals will thus be heavily penalised.

The new Order, which came into force on Friday, 31st January last, is thus of two-fold value. It will eradicate a costly pest and it will also help to keep open for Ulster farmers the cross-Channel markets.

The treatment required is simple, inexpensive and effective. Infested cattle are to be dressed with a wash consisting of Derris preparation, of the prescribed strength, at intervals of twenty-eight days, commencing in each year BETWEEN 15TH AND 22ND DAYS OF MARCH or as soon after that as the maggots appear. The dressing is to be continued, at intervals of twenty-eight days, until no further parasites appear. Experiments have shown that, normally, four such dressings are necessary to achieve complete success, and the Order allows for the cessation of treatment after the end of June. The dressing is to be applied so that it penetrates through the breathing hole and comes into contact with the maggot.

The Ministry has ensured that only suitable preparations will be placed on sale for the purpose of compliance with this Order. So far, three officially tested Derris powders (Polvo, Cooper's Warble Fly Powder, and Paragad) are on the market, procurable in conveniently-sized packages, and at reasonable prices; the cost of dressing an animal four times is estimated at between 1d. and 2d. per head. Great care should be taken to see that the directions given by the manufacturers as to dilution and use are strictly followed. For instance, in the case of Polvo, soft soap has to be added, whereas in the case of the other two the addition of water is alone required. Every package of Derris Powder sold for the purposes of the Order has to be labelled to the effect that the contents are suitable for the purpose, and farmers should be careful not to purchase any preparation not so labelled.

As an alternative to the dressing, the Order permits the removal of maggots by squeezing them out from the backs of cattle. Maggots removed in this way must be effectively destroyed, and the process should commence BETWEEN THE 15TH AND 22ND DAYS OF MARCH or as soon after that as the maggots have reached the stage at which they can be so removed. This removing process is to be repeated at intervals of not more than ten days until the maggots cease to appear in the skin on the backs of the cattle. As will be realised, this removal method takes more time and is more troublesome than dressing, and consequently the dressing system is recommended.

Veterinary Inspectors of the Ministry will be on the look-out for warbled animals in markets, fairs, saleyards and farms, and persons who have failed to treat their cattle as laid down will undoubtedly be prosecuted. Farmers should, therefore, both in their own interests and to avoid being brought into Court, carry out the simple and inexpensive requirements of the Order. The Ministry is distributing widely a special circular regarding the Order, and leaflet No. 64, regarding the warble fly, is obtainable free of charge on application to the Secretary, Ministry of Agriculture, Stormont.

WHEAT ACT, 1932.

IMPORTANT NOTICE BY THE WHEAT COMMISSION TO FARMERS AND AGRICULTURAL MERCHANTS.

ADVANCE PAYMENT TO REGISTERED GROWERS ON ACCOUNT OF DEFICIENCY PAYMENTS FOR 1935-36.

The Wheat Commission have given notice that, in accordance with Bye-law 31 of the Wheat Bye-laws, 1932, they have decided to make an advance payment to all registered growers who deliver proper applications on valid wheat certificates to the Commission on or before Friday, 24th January, 1936. This advance payment is on

account of the deficiency payments that will become due under the Wheat Act for the cereal year ending 31st July, 1936. It will be made on or about Saturday, the 22nd February, 1936, and will be at the rate of 2s. 9d. per cwt., equal to 12s. 4½d. per quarter of 504 lbs. Such balance as may become due will be paid in September, 1936. Until then no further payment will be made in respect of these certificates.

This payment will place growers who have delivered wheat certificates since the 1st November in the same position as those who received a payment on account at the end of November, 1935.

The Wheat Commission hope to make advance payments on two more occasions during the current cereal year. The dates by which wheat certificates will have to be delivered to qualify for one of these payments, and the dates of the payments, will be announced in due course.

ANTICIPATED SUPPLY OF MILLABLE WHEAT.

The Minister of Agriculture and Fisheries has made the Wheat (Anticipated Supply) No. 1 Order, 1936, superseding the Wheat (Anticipated Supply) No. 2 Order, 1935, made on the 24th September, 1935.

Under the Wheat Act, 1932, the Minister is required to make an Order at the beginning of each cereal year prescribing the quantity (called the "ANTICIPATED SUPPLY") of home-grown millable wheat of their own growing which he anticipates will be sold by registered growers during that year. The Minister, after consultation with the Wheat Commission, accordingly prescribed in the Anticipated Supply No. 2 Order, 1935, the anticipated supply for the cereal year beginning 1st August, 1935, as 29,200,000 cwt.

The Act further provides that the anticipated supply may be varied by Order BEFORE THE END OF JANUARY in the cereal year to which it relates, and the Minister, after consultation with the Wheat Commission, has accordingly by the Wheat (Anticipated Supply) No. 1 Order, 1936, RAISED THE ANTICIPATED SUPPLY FROM 29,200,000 CWT. TO 30,400,000 CWT. This variation is due to increases in the final estimates of acreage and yield of home-grown wheat of the 1935 harvest.

The new Order does not have the effect of increasing the total sum which will be received by registered growers as a whole on account of deficiency payments, nor will it increase the amount of quota payments to be made by millers and importers of flour. The Wheat Act provides a maximum of 27 million cwt. as the quantity of millable wheat in respect of which full deficiency payments may be paid. This Order will, however, affect the quantity of wheat which the Minister

may require the Flour Millers' Corporation to buy, as the Act provides that if the Wheat Commission make representation, the Minister may require the Corporation to purchase during the months of June and July of any cereal year, unsold stocks of home-grown millable wheat up to a maximum of one-eighth of the anticipated supply for the year.

SEASONAL FARM NOTES.

THE LAND.

PLOUGHING.—The ploughing of stubble ground, if not already completed, and of leas, should be proceeded with at every opportunity so that this work may be finished as soon as possible and full advantage taken of suitable weather later on for the ploughing of land under root crops last year. Cross-ploughing of land intended for early potatoes can be undertaken now when the ground is in a fit condition.

POTATOES.—Potatoes stored in pits in fields should be lifted when opportunity offers so that the seed may be boxed and well sprouted before planting time. Early lifting of the potatoes from the pits also permits of the ground being ploughed when soil conditions are suitable.

Where it is intended to obtain fresh supplies of seed potatoes, the necessity for placing orders early may again be stressed, as may also the advantages of planting seed from crops certified pure and showing a high degree of freedom from diseases such as leaf roll and mosaic. As a good demand is being experienced for such seed, there is likely to be difficulty in obtaining supplies, unless orders are placed early. Lists giving the names and addresses of growers of certified crops and of stock seed can be obtained from the Ministry free, on request.

OATS.—Supplies of seed oats should also be obtained or ordered in good time. The results of oat variety trials carried out by Agricultural Instructors during last season are given on pages 32 to 35 of this report. It will be observed from these results that higher average yields were obtained from some of the newer varieties and strains than from Potato oats. Farmers who intend to grow any of these varieties during the coming season should consult the Agricultural Instructor for information as to where supplies of seed are likely to be obtained. The Instructor can also advise regarding the variety which is most suitable for the district.

WHEAT.—Where soil conditions are suitable, spring varieties of wheat, such as Red Marvel and Red Fife, may be sown during the months of February and March. Farmers who intend to sow wheat during these months are strongly advised to ensure that a suitable spring variety is obtained, as satisfactory crops from winter varieties cannot be obtained when sowing is delayed until February. The rate

of seeding for spring-sown wheat, except Red Fife, should be from 1 to 2 stones per acre, more than for winter varieties; in the case of Red Fife, which tillers poorly, about 18 stones of seed per statute acre should be sown. Spring wheat should be sown on a well-prepared seed bed on land in good condition so that a vigorous braird and quick-growing crop may be obtained.

To assist in obtaining a vigorous braird and as a preventive of smut and other seed-borne diseases, the dressing of the seed before sowing with either "Ceresan" or "Agrosan G," at the rate of from 5 to 8 ounces per cwt. of seed, is recommended.

PASTURES.—Where phosphatic manures have not been applied during the winter to grassland, improvement in this year's grazing may still be obtained by the application of Semsol or of superphosphate now at the rate of from 4 to 6 cwt. per statute acre. On the lighter classes of soils, the addition of 1 cwt. 30 per cent. potash salts per acre is beneficial. Where there is a mat of old grass or of fog, the field should be thoroughly harrowed before the manures are applied. An application of 1 cwt. per acre of a nitrogenous manure, such as sulphate of ammonia or nitro-chalk, during March or April assists in eradicating undecayed vegetation or fog, and is also beneficial for the production of early grass.

SUPPLIES OF MANURES.—An estimate of the probable quantities of the various classes of artificial manures required should be made now and orders for supplies placed. Better terms are usually obtained when all the manures are purchased early and delivery taken before the rush season begins. When manures are stored in a dry shed, there is little risk of deterioration in condition or of fertilising properties. Experiments have shown that the mixture recommended for potatoes, namely, 1 cwt. sulphate of ammonia, 4 cwt. superphosphate and 1 cwt. muriate of potash, can be mixed two or three weeks before use without impairing its efficiency in any way.

The mixtures and quantities of manures for the different crops may be found in the Annual Reports of the County Committees of Agriculture, and also on page 35 of this report.

LIVE STOCK.

OX-WARBLE FLY.—The attention of cattle-owners is drawn to the Order which has been issued recently regarding the destruction of ox-warble fly maggots in cattle. To comply with the provisions of the Order, cattle must be dressed with a Derris-soap wash, the first dressing in each year to be applied between the 15th and 22nd March and followed by subsequent dressings at intervals of 28 days, until no further maggots appear. Suitable Derris preparations for this

purpose are "Polvo", "Cooper's Warble Fly Powder" and "Paragad," supplies of which can be obtained from most chemists and merchants who trade in agricultural requisites.

The dressing is simple to apply and inexpensive. Usually from three to four applications of the wash are required each season to destroy all the maggots. If all cattle are dressed in accordance with the Order, the pest will soon become extinct, and in view of the enormous loss which it causes to the cattle industry each year, farmers are strongly urged to comply strictly with the Order.

The freeing of cattle from warbles will ensure that they thrive better and have an enhanced value. Warbled hides will disappear, and the extra value of the perfect hides will indirectly mean that warble-free animals will be worth more than those showing the presence of warbles. These considerations leave no doubt as to the benefits to the cattle industry which compliance with the Order will confer, but as a similar Order applies in Great Britain it is imperative for cattle owners in Northern Ireland to dress their cattle so as to ensure freedom of shipment of cattle to Great Britain.

Supplies of the preparations should be obtained in good time so that there will be no delay when the period for the application of the wash arrives. Particulars regarding the regulations to be complied with under the Order are given in Circular No. 13, and information relating to the preparation and application of the washes is given in Leaflet No. 64.

CALVES.—Readers are reminded of the importance of dishorning all calves intended for sale as beef or stores before they are nine days old. The operation consists in rubbing the horn "buds" with a stick of caustic potash, which can be obtained from any chemist at a trifling cost. Detailed directions for dishorning by this method are given in Leaflet No. 5.

PIGS.—Sows and litters should be allowed out as much as possible from now onwards when weather conditions are suitable. A run out on fresh, clean pasture daily promotes good thriving and aids in preventing the development of anaemia or bloodlessness, which is common in winter litters. This ailment can be prevented by painting the sow's udder with a mixture of iron and copper salts during the time the young pigs are suckling. Full particulars regarding this treatment are given in Leaflet No. 45.

From reports received, it would appear that on many farms pigs are infested with worms, and, accordingly, attention is again directed to the importance of dosing pigs after weaning to destroy these parasites. Sows should also be dosed either after the young pigs have been weaned or about one month before farrowing. Information

relating to the dosing of pigs for worms is given on page 46 of this report.

SHEEP.—With the advent of the lambing season, special care of the ewe flock is necessary so that losses at lambing may be kept at the minimum. The ewes should be brought to a convenient field in the evenings in order that they can be looked over last thing at night and again early in the morning, and cases where assistance at lambing is necessary observed in good time. Before giving any assistance to a lambing ewe, the hands of the attendant should be thoroughly washed with soap and warm water, to which a little disinfectant has been added, and subsequently lubricated with raw linseed oil. It is a good practice to put a little mild disinfectant on the lambs' navel in all cases after lambing and to clip any loose wool from around the udders and flanks of the ewes.

SEASONAL GARDEN AND ORCHARD NOTES.

Every opportunity should be taken when the weather is mild and calm to get tar distillate washes applied to apple trees for the control of aphid and apple sucker so that this work may be finished by the end of this month. Thorough spraying is essential if success is to be achieved. Every part of the tree above ground should be thoroughly wetted with the spray.

Strawberries may now be planted when the ground is in a suitable condition. Full particulars regarding the cultivation of strawberries are given in Leaflet No. 68.

Cabbage plants which have wintered in the seed bed or in a nursery bed, and cauliflowers which have wintered in a cold frame, may now be planted out. Both these crops require liberal manuring. Early spring cabbage should receive a second dressing of nitrate of soda at the rate of 3 cwt. per acre.

New plantations of rhubarb can now be made. The ground for this crop should be deeply dug and well manured. Care must be taken not to bury the "eyes" or buds too deeply. When planting is finished, the buds should be just below the surface of the ground. The soil should be made firm around the roots and afterwards a mulch of strawy manure should be given. Established plants will also benefit from a mulch of manure.

Shallots and potato onions should be planted now, if this has not already been done. These also require a deep, well manured soil. The bulbs should be so planted that the tip of each appears above the soil.

On warm, sheltered soils early potatoes can be planted, and seeds of broad beans and early peas sown. Towards the end of February and early in March, if weather and soil conditions are suitable, a sowing of onions, parsnips, Brussels sprouts, cabbage and cauliflowers may be made out of doors. Particulars of vegetable growing are given in Leaflet No. 67.

SEASONAL POULTRY KEEPING NOTES.

Hatching from heavy breeds should be proceeded with during February, but if the pullets are to come into production early next autumn, eggs from such birds should not be hatched after the month of March.

Careful attention to the management and feeding of the breeding stock is essential if eggs of high fertility and hatchability are to be produced throughout the hatching season. The birds, particularly the cockerels, should be examined occasionally to ensure that they are being maintained in a fit breeding condition. If the cockerels are losing condition they cannot breed well, and hatching results will be affected. Male birds which are losing condition should receive a feed apart from the hens when they go to roost in the evenings. The addition of cod-liver oil to the mash at the rate of 1 quart to each cwt. of mash, and the provision of a supply of green food daily, will assist in obtaining eggs of good fertility and hatchability. The formula of a suitable mash for the breeding stock is given on page 40.

Improper feeding and management of the breeding stock may be a predisposing cause of a high proportion of "dead-in-shell" chicks, as may also faulty incubation. Where a high proportion of "dead-in-shell" is occurring, the breeding flock should receive attention, while the provision of adequate ventilation in the incubator room, and of sufficient moisture during incubation, should not be overlooked. A ventilator of the "hit and miss" type, placed low down in the wall of the incubator room which faces west, is a convenient means of improving the ventilation arrangements. Additional moisture can be conveniently provided by placing a tray containing peat moss underneath the incubator and keeping the peat moss well moistened with hot water during the later stages of incubation.

The feeding and management of the chickens call for special attention now. The quality of the ingredients used in the meal and grain mixtures is of primary importance. The foods used should be of the best quality only, fresh and free from mustiness, and always placed before the birds in a fresh, clean, palatable condition. Mash for chickens can be conveniently made up at home, and by doing so, poultry-keepers can not only ensure that the ingredients used in making up the mash are of the best quality, but can also effect

economies in outlay, as home-made mixtures are generally cheaper than proprietary ready-mixed mashes. Particulars of suitable meal and grain mixtures for chicken rearing purposes which can be made up on the farm, are given on page 39, and fuller particulars are given in Leaflet No. 20.

The importance of providing ample accommodation for the young, growing chickens may again be emphasised. Overcrowding is the most common cause of general unthriftiness and losses during the rearing stages, besides being conducive to the spread of disease. Adequate accommodation should, therefore, be provided in hovers, brooders and rearing houses. Only 100 chicks should be placed in a hover or brooder of 150 chick capacity, while an allowance of about one square foot of floor space to every two chickens in the rearing house is necessary.

The value of direct sunlight for young, growing chickens should always be appreciated, and the windows or shutters of the rearing house left open whenever weather conditions permit.

Turkey hens for breeding should be fed on a suitable laying mash once daily from now onwards. A suitable mash mixture for this purpose is 3 parts bran, 4 parts pollard, 2 parts maize meal, and 1 part fish meal or meat and bone meal. In addition, a grain mixture consisting of oats and cracked maize should be given in the evening before the birds go to roost. Suitable feeding of the breeding stock will influence the number of eggs laid and aid in producing vigorous, easily reared chicks. Full particulars regarding the rearing and feeding of turkeys are given in Leaflet No. 37.

RESULTS OF OAT VARIETY TESTS.

As in previous years, oat variety tests were carried out by the Agricultural Instructors during the past season. Two series of tests were arranged. In one series, certain varieties which were considered suitable for the better classes of soils were tested under comparable conditions, while in the other series, varieties which suit the poorer soils in hilly districts were included.

VARIETIES SUITABLE FOR GOOD SOILS.

For these trials seven varieties were specified, and a selection was made from these seven for each test centre. The varieties included those which in previous trials had given the most promising results, and also some of the newer varieties and strains, some of which were produced at the Ministry's Plant Breeding Station. Particulars

regarding the average yields per statute acre obtained from groups of varieties which were grown at a similar number of centres are given in the following table :—

No. of Centres.	KING.		CROWN.		STORMONT ARROW.		MCGILL-SMITH POTATO.	
	Grain c. qr.	Straw cwt.	Grain c. qr.	Straw cwt.	Grain c. qr.	Straw cwt.	Grain c. qr.	Straw cwt.
8	—	—	26 2	31	27 2	34	23 2	32
6	22 1	26	23 3	26	23 2	28	—	—
6	—	—	28 1	33	29 1	35	25 0	34
2	—	—	30 3	43	31 1	43	25 2	34

No. of Centres.	UTILITY.		ELDER.		STORMONT IRIS.	
	Grain c. qr.	Straw cwt.	Grain c. qr.	Straw cwt.	Grain c. qr.	Straw cwt.
8	—	—	—	—	—	—
6	—	—	—	—	—	—
6	25 1	35	26 1	32	—	—
2	26 0	36	25 2	36	35 2	41

It will be observed from these averages that Stormont Arrow has given consistently high yields, and that at most centres it proved to be superior to other varieties. This oat was raised at the Ministry's Plant Breeding Station from a cross between Black Potato and Victory. It has short, stiff straw and is not so liable to lodge as other varieties.

Crown has also given yields almost equal to those obtained from Stormont Arrow. This variety can be relied on to produce heavy yields of grain when grown on the better classes of soils. King is a further variety which will produce satisfactory crops on land in good condition.

Stormont Iris is a new variety, produced at the Ministry's Plant Breeding Station from a cross between Supreme and Victory. It ripens early and for this reason is very suitable for late districts. At the two centres where it was included in these trials it gave yields which were superior to those given by the other varieties with which it was compared.

The remaining varieties in these tests were of the Potato type, and the yields obtained, although satisfactory, were considerably lower in most cases than those from the varieties mentioned above. While the merits of the Potato oat are well known, it is now recognised that heavier yields of grain can be obtained from some of the newer varieties when grown under suitable conditions.

Farmers should consult the Agricultural Instructor, if advice is desired, as to the most suitable varieties for any particular district or soil.

VARIETIES SUITABLE FOR POORER SOILS IN HILLY DISTRICTS.

In these trials, the object was to obtain information as to the cropping capabilities of some of the varieties likely to succeed best when grown on the poorer soils in mountainous districts. The varieties included a new oat raised at the Ministry's Plant Breeding Station from a cross between Potato and Sandy, and now known as Stormont Kern, and a selection of a short-grained type of Tyrone Tawny, made and bulked at the Plant Breeding Station. A selection of Sandy called Gordon Sandy, and of Poland, along with the varieties Utility and McGillsmith Potato, were included.

Particulars of the average results per statute acre obtained from groups of varieties grown at similar numbers of centres are as follows :—

No. of Centres.	MCGILLSMITH POTATO.		UTILITY.		SHORT-GRAINED TYRONE TAWNY.	
	Grain c. qr.	Straw cwt.	Grain c. qr.	Straw cwt.	Grain c. qr.	Straw cwt.
8	18 2	36	—	—	16 3	31
5	17 2	36	18 2	35	—	—
5	17 1	39	17 2	37	16 2	37

No. of Centres.	GORDON SANDY.		STORMONT KERN.		POLAND.	
	Grain c. qr.	Straw cwt.	Grain c. qr.	Straw cwt.	Grain c. qr.	Straw cwt.
8	17 3	35	19 1	34	18 1	37
5	18 3	39	20 1	36	19 1	40
5	17 2	40	18 1	37	18 1	43

The new variety, Stormont Kern, gave very promising results in the two previous years' trials and again in this year's tests. It will be seen that the average yield of grain was in most cases superior to that obtained from the other varieties. It ripens earlier than Poland and may thus prove to be a valuable substitute for that variety in districts where Poland is widely grown.

Poland gave consistently high yields in these trials, and at the five centres where all varieties were included the average yield obtained from it equalled that of Stormont Kern. This variety is useful for exposed situations and for poor cultural conditions generally. It is, however, late in ripening.

Gordon Sandy has given good yields in previous trials and also in the present series, where, at the five centres at which all varieties were grown, it gave an average yield of grain greater than McGillsmith Potato and equal to Utility, which is a selection of Potato.

The average yield obtained from the short-grained Tyrone Tawny was lower than those obtained from the other varieties. This variety

is, however, very useful for growing in poor soils and is characterised by great stooling capacity. The grain is shorter and plumper than that of the ordinary Tawny in cultivation.

Farmers who desire seed of any of the varieties mentioned in these trials should consult the Agricultural Instructor for the district for information regarding sources of supply of seed.

MANURIAL MIXTURES FOR FARM CROPS.

As farmers will be considering the ordering of supplies of artificial manures for the different crops at this time, the following notes on suitable manurial mixtures may be helpful in estimating the quantities of manures which will be required.

OATS.—For oats on lea ground in poor condition, and on land following potatoes, the following mixture of artificial manures per statute acre is recommended for application a few days before or at time of sowing the seed :—

1 cwt. sulphate of ammonia,
2 cwt. superphosphate,
1 cwt. 30 per cent. potash salts.

For oats following wild white clover lea and on other land in good condition, an application of 2 cwt. superphosphate and from $\frac{1}{2}$ to 1 cwt. 30 per cent. potash salts per statute acre increases the yield and assists in preventing lodging.

WHEAT.—An application of 1 cwt. of a nitrogenous manure, such as sulphate of ammonia, nitro-chalk or nitrate of soda, per statute acre, should be applied during early April, and the braird harrowed lightly afterwards.

FLAX.—From 1 to $1\frac{1}{2}$ cwt. muriate of potash per statute acre should be applied before sowing the seed. On land in poor condition, the addition of $\frac{1}{2}$ cwt. sulphate of ammonia per statute acre is beneficial.

POTATOES.—Where farmyard manure is available, a mixture of 1 cwt. sulphate of ammonia, 4 cwt. superphosphate, 1 cwt. muriate of potash, along with 15 tons farmyard manure per statute acre, is recommended. The artificials can be mixed and stored for from two to three weeks before use without impairing the efficiency of the mixture.

If farmyard manure is not available, the mixture of artificials stated should be applied at the rate of 9 cwt. per statute acre.

TURNIPS.—A dressing of from 10 to 15 tons of farmyard manure,

along with from 4 to 6 cwt. superphosphate, Semsol, high grade basic slag, or Gafsa rock phosphate per statute acre.

Where farmyard manure is not available, a dressing of from 1 to 1½ cwt. sulphate of ammonia, 6 cwt. superphosphate or other phosphatic manure, and from 1 to 2 cwt. 30 per cent. potash salts per statute acre should be applied. If "finger and toe" disease is feared, basic slag should be used in preference to the other sources of phosphates.

MANGELS.—Liberal manuring of mangels is necessary to obtain best results. The following dressing per statute acre is recommended :—

20-25 tons farmyard manure.
2 cwt. sulphate of ammonia.
4 cwt. superphosphate.
4 cwt. kainit.

In addition, 1 cwt. nitrate of soda per acre, applied as a top dressing after thinning, benefits the crop.

CABBAGE AND KALE.—For these crops the following dressing per statute acre should be given :—

20-25 cwt. farmyard manure.
2 cwt. sulphate of ammonia.
4 cwt. superphosphate.

HAY.—A suitable top dressing for application during March to land intended for hay for cutting or for seed sowing purposes is :—

1 cwt. sulphate of ammonia	}	per statute acre.
2 cwt. superphosphate		
1 cwt. 30 per cent. potash salts		

PASTURES.—Where the slower acting phosphatic manures, such as high grade basic slag or Gafsa rock phosphate, have not been applied during the winter months to grassland, Semsol or superphosphate can be applied at the rate of from 4 to 6 cwt. per statute acre during the spring months. On the lighter classes of soils the application of 1 cwt. 30 per cent. potash salts per acre, in addition to the phosphatic manure, is beneficial.

For the production of early grass, 1 cwt. sulphate of ammonia or nitro-chalk per acre should be applied during the first week of April.

THE PURCHASE OF READY-MIXED RATIONS FOR STOCK FEEDING.

Various brands of ready-mixed rations for cows, calves, pigs, and poultry are now being offered for sale to farmers and poultry keepers,

and purchasers are sometimes concerned regarding the suitability of these for the particular purpose in view; also if they are of the composition specified and if they are good value for money when compared with rations of similar composition which can be made up at home.

These are all very important aspects of successful feeding which the user of feeding stuffs should consider carefully before making purchases.

A particular ration may apparently give satisfactory results, but its cost may be unnecessarily high and profits thereby are reduced proportionately. The composition of a ready-mixed ration may not be such as is the most suitable for the purpose in view, and, accordingly, the ration may not give maximum returns, although being partly successful.

Purchasers of ready-mixed rations are reminded that the provisions of the Fertilisers and Feeding Stuffs Act are intended to safeguard them against being supplied with an article which is not of the nature and quality desired. Under the Act, all ready-mixed rations are regarded as compounds, and, accordingly, the percentages of oil, albuminoids (protein), and fibre, respectively, which they contain must be declared by the seller. This declaration of composition may be given on the invoice, be printed on the bag or on a label attached to the bag, or conveyed in some other form, in writing, to the purchaser. Where possible, it is preferable to purchase only those rations, the compositions of which are branded on the bags or on labels attached to the bags.

The important and valuable constituents of any feeding stuff or any mixture of feeding stuffs are oils or fats, albuminoids or proteins, carbohydrates or starches, and minerals, but, as already stated, the constituents of which the percentages are to be declared in the case of a mixed ration are oil, protein and fibre. Fibre is not a valuable nutritional ingredient like oil and protein, being largely of an indigestible nature. The lower the percentage of fibre, therefore, within reason, the more valuable will be the ration, and it is for this reason that the Act requires the percentage of fibre to be stated in the statutory statement. As many farmers are not familiar with the average composition of suitable rations for the various classes of stock, it is felt that that information would be of interest and value.

The particulars which follow are in respect of the rations recommended by the Ministry for the classes of stock specified.

For convenience, the formulae for the rations, as well as the average composition (percentages of oil, protein and fibre), are given. It should be noted that the composition of each ration as stated is that

applicable in the case of rations made from foods of good average quality.

Formula (Parts by weight).	Average Composition.
FOR DAIRY COWS.	
(1) 3 parts crushed oats 2 parts maize meal 1 part red bran 2½ parts decorticated cotton cake, or 2 parts decorticated earthnut cake	19.0 per cent. protein 5.9 per cent. oil 7.0 per cent. fibre
(2) 2 parts crushed oats 2 parts bean meal 1 part coarsely ground wheat 1¼ parts decorticated cotton cake	20.0 per cent. protein 4.0 per cent. oil 7.0 per cent. fibre
(3) 2 parts maize meal 1 part pollard 1 part bran 1½ parts decorticated cotton cake, or 1¼ parts soya bean meal	20.5 per cent. protein 5.0 per cent. oil 5.5 per cent. fibre
FOR FATTENING CATTLE.	
2 parts crushed oats 2 parts maize meal 1 part decorticated earthnut cake	17.0 per cent. protein 5.5 per cent. oil 5.5 per cent. fibre
FOR YOUNG, GROWING CATTLE.	
2 parts crushed oats 1 part maize meal 1 part decorticated earthnut cake	19.0 per cent. protein 5.8 per cent. oil 6.4 per cent. fibre
FOR FATTENING PIGS.	
(1) 2 parts barley meal 2 parts maize meal 2 parts pollard 1 part flaked meal 1 part bran 1 part soya bean meal with 2 lb. mineral mixture (3 parts ground limestone, 1 part common salt) to each cwt. meal mixture	16.2 per cent. protein 3.4 per cent. oil 4.5 per cent. fibre
(2) 3 parts barley meal 3 parts maize meal 2 parts pollard 1 part bran 1 part meat and bone meal	17.0 per cent. protein 3.8 per cent. oil 4.0 per cent. fibre

Formula (Parts by weight).	Average Composition.
FOR SOWS WITH LITTERS. 3 parts maize meal 1 part flaked meal 2½ parts red bran 3 parts brown pollard 1½ parts soya bean meal with 3 lb. mineral mixture as above to each cwt. of meal mixture.	18.0 per cent. protein 3.6 per cent. oil 5.1 per cent. fibre
FOR IN-PIG SOWS. 4 parts maize meal 4 parts brown pollard 2 parts red bran	14.0 per cent. protein 4.0 per cent. oil 5.0 per cent. fibre
FOR YOUNG CHICKENS. 4 parts bran 2 parts sharps (fine pollard) 1 part Sussex ground oats 1 part maize meal 1 part fish meal	18.2 per cent. protein 4.0 per cent. oil 6.5 per cent. fibre
FOR GROWING BIRDS. 3 parts bran 4 parts sharps 2 parts Sussex ground oats 1 part maize meal ¼ part fish meal, or meat and bone meal	13.5 per cent. protein 4.3 per cent. oil 6.5 per cent. fibre
FOR LAYING PULLETS. (1) 4 parts pollard 2 parts bran 2 parts maize meal 1 part Sussex ground oats 1 part fish meal (60% protein) (2) 4 parts pollard 2 parts bran 2 parts maize meal 1 part Sussex ground oats ½ part fish meal ¾ part soya bean meal ½ lb. common salt per cwt. meal mixture.	17.0 per cent. protein 4.5 per cent. oil 5.0 per cent. fibre 16.8 per cent. protein 4.0 per cent. oil 5.4 per cent. fibre

Formula (Parts by weight).	Average Composition.
FOR BREEDING STOCK.	
3 parts bran	
2 parts pollard	17.4 per cent. protein
2 parts coarsely ground wheat	3.7 per cent. oil
2 parts maize meal	4.7 per cent. fibre
1 part fish meal or meat and bone meal	
1 pint cod-liver oil to each 4 stones of mash	

Purchasers of ready-mixed rations should, in all cases at the time of purchase, ask for the statutory statement showing the percentage of oil, protein and fibre, respectively, which the ration contains and compare the figures with those given above in respect of the ration for the particular purpose in view. If the figures differ substantially from those given above, the ration has either been prepared from foods which are not of average quality or the foods have not been blended in the proper proportions. It should be noted that the percentage of protein should be at least as high as that stated in the composition figures given above, and the percentage of oil and fibre not appreciably higher than those given. It is particularly important to see that the oil content of rations for fattening pigs is not higher than 4 per cent.

The figures of composition of the rations will also help in determining whether or not the price asked for the mixed ration is a reasonable one. It is an easy matter to determine the cost of a ton of any of the mixtures given in the above table at the current prices of the different foods comprising them. If, therefore, the ready-mixed ration of a composition similar to that of the home-mixed ration is offered at a price greatly in excess of that at which the home-mixed ration can be obtained, it is obvious that the home-mixed ration will be the more economical to use.

ANNOUNCEMENTS AND REMINDERS.

The next session at the Ulster Dairy School, Cookstown, and at the North-West School, Strabane, begins on 31st March. Applications for the free scholarships to the North-West School should be made by intending pupils to the Secretary, Committee of Agriculture, for the County, as soon as possible. Prospectuses of both Schools can be obtained free, on request, from the Ministry.

The Annual Reports of the County Committees of Agriculture for the year 1935 will soon be available, and copies may be obtained free,

on request, from the Secretary, Committee of Agriculture, for the County. These reports contain, in addition to the detailed results of the experiments carried out by Instructors, useful information on Agricultural, Horticultural, Dairying and Poultry-keeping subjects.

Hatching eggs from superior stock which have been blood-tested for bacillary white diarrhoea disease can be obtained from County Poultry Stations and from owners of Accredited Poultry Farms. Lists giving the names and addresses of hen and goose stations and also of turkey stations can be obtained free, on request, from the Secretary, County Committee of Agriculture. Lists of owners of Accredited Poultry Farms can be obtained free from the Ministry, on request.

Farmers desiring supplies of seed of the newer varieties and strains of oats should communicate with the Agricultural Instructor for the district without delay for advice as to where supplies may be obtained.

Supplies of seed potatoes should also be obtained without delay. Lists giving the names and addresses of growers of selected stocks, and of those having crops certified pure, may be obtained free from the Ministry, on request.

There is still time to plant young forest trees, but these should be put in before the end of February. Particulars regarding the Ministry's Scheme, under which young trees of various species are supplied at reduced prices to farmers, will be sent on request.

The Ox Warble Fly Order requires that cattle should be dressed with a suitable Derris wash between the 15th and 22nd March, and at intervals of 28 days afterwards until no further warble swellings appear. Full particulars are given in Circular No. 13, and hints on the preparation and application of washes are given in Leaflet No. 64.

The following leaflets are at present being revised :—

No. 1—"Flax Seed (1936)."—This leaflet gives particulars regarding suitable varieties of flax seed for sowing this season.

No. 7—"Potato Trials."

No. 13—"Contagious Abortion in Cattle."

No. 32—"Roup of Poultry (Fowl Pox)."

No. 37—"The Rearing and Fattening of Turkeys."

No. 47—"The Care and Management of Sheep."

No. 59—"Bacillary White Diarrhoea (Pullorum Disease)."

Revised copies of the above leaflets will soon be available for distribution. Copies of these, and of other leaflets mentioned in this Report, are obtainable on request.

LECTURES AND CLASSES.

The following lectures and classes have been arranged by County Committees of Agriculture:—

LECTURES.

County.	Day and Date.	Centre.	Time.	Subject.
Antrim ..	Frid. 28th Feb.	Sullatober P.E.S.	p.m. 8. 0	The Ox-Warble Fly.
„ ..	Wed., 11th Mar.	Ballynashee P.E.S.	„	Do.
„ ..	Frid., 13th Mar.	Straidnahanna P.E.S.	„	Do.
„ ..	Thurs., 5th Mar.	Ballybogie Old School	7.30	Bee Keeping.
Armagh ..	Wed., 19th Feb.	Ballylane P.E.S.	8.0	Common Diseases of Animals.
Down ..	Frid., 21st Feb.	Artana P.E.S.	8.0	The Ox-Warble Fly.
Fermanagh	Frid., 21st Feb.	Carroo P.E.S.	7.30	Feeding of Livestock and Pasture Management.
„ ..	Mon., 24th Feb.	Cooneen P.E.S.	„	Do.
„ ..	Tues., 25th Feb.	Carrowkeel P.E.S.	„	Do.
„ ..	Wed., 26th Feb.	Cashelnarea P.E.S.	„	Do.
„ ..	Thurs., 27th Feb.	Cavanaleck P.E.S.	„	Do.
„ ..	Frid., 28th Feb.	Churchhill P.E.S.	„	Do.
Londonderry	Wed., 19th Feb.	Ballyhackett P.E.S., Downhill.	7.30	The Growing of Field Crops.
Tyrone ..	Tues., 18th Feb.	Strawlongford Hall	8. 0	Planting and Management of Fruit and Forest Trees.
„ ..	Frid., 21st Feb.	Loughmacrory Old School.	„	Do.

CLASSES.

County.	Day and Date of Commencement of Class.	Centre.	Time at which Class is held.	Subject.
Antrim ..	Mond., 17th Feb.	Market House, Crumlin.	p.m. 7. 0	Poultry-Keeping.
Down ..	Mond., 17th Feb.	Cabra, Rathfriland	5. 0	Poultry Keeping.
Londonderry	Wed., 5th Feb.	Derramore Lecture Hall, Limavady.	7. 0	Poultry-Keeping.

Each of the above classes will be continued for four weeks.

DEMONSTRATION.

A demonstration on the pruning of apple trees will be given in Mr. Robert Greer's orchard, Ahorey, Portadown, by the Horticultural Instructor, on Friday, 21st February, at 1 p.m.

AGRICULTURAL LOANS SCHEME.

The Scheme of Loans for the Purchase of Live Stock, Seeds and Fertilisers is being continued on lines similar to those in operation during the year 1935.

Loans will be issued at the low interest rate of 3 per cent., and the security required will be a Promissory Note to be signed by the borrower and two approved sureties.

Loans for the purchase of live stock will normally be repayable by four instalments, the first of which will become due on the 31st December of the year following the year of issue.

Loans for the purchase of seeds and fertilisers will, if granted on or before 30th June in any year, be repayable by two instalments on the 31st December of that year and the 31st December of the following year, respectively, and if granted on or after the 1st July in any year, will be repayable in full on the 31st December of the following year.

Application forms may be obtained from the Ministry of Agriculture, Stormont, Belfast, or from any Royal Ulster Constabulary Barracks.

FORESTRY.

SCHEME FOR SUPPLYING YOUNG TREES AT REDUCED PRICES TO FARMERS.

The attention of farmers is directed to the Scheme under which young forest trees of various species grown in the Ministry's nurseries are supplied at the reduced price of 30/- per 1,000. There is at present a number of such trees available of each of the species mentioned below, and those who wish to purchase 1,000 or more should communicate at once with the Secretary, Ministry of Agriculture, Stormont, Belfast, from whom copies of the Scheme and application forms can be obtained. Each lot of 1,000 trees would include not more than two species, except that a few *Pinus Murrayana*, White Spruce, or Mountain Pine, of which there is only a limited quantity, and which are intended for shelter belts, could be included in a consignment, if desired, for mixing with one or two other species, such as Scots Pine or Spruce.

Sitka Spruce,
Japanese Larch,
Norway Spruce,
Scots Pine,
Mountain Pine,
Pinus Murrayana,
White Spruce.

FOURTEENTH EGG LAYING TEST AT STORMONT.

RESULTS TO END OF FOURTH PERIOD.

The fourth period of four weeks ended on the 24th January, 1936. The average egg production during that period in respect of 912 birds originally included was 14.68 eggs per bird, as compared with a similar average of 13.0 eggs per bird for the previous period, and of 16.4 for the corresponding period of the previous test. The average production of the birds alive at the end of the period was :—

For the period of four weeks under review . . 15.0 eggs per bird.

For the first four periods of four weeks each . 53.0 " " "

Particulars of the leading pens as at the end of the fourth period are given hereunder.

SECTION 1.—WHITE WYANDOTTES (OPEN). 30 PENS.

Position.	No. of Pen.	Name and Address of Owner.	Number of Eggs Laid.			Test Score Value.
			Super Grade.	First Grade.	Below First Grade.	
1	11	Mr. J. Hall, Lilac Cottage, Donacloney, Co. Down.	307	110	13	417
2	3	Mrs. H. G. Darley, Trory, Ballinamallard, Co. Fermanagh.	179	230	72	409
3	9	Mrs. D. C. Gamble, Roan Lodge, Coalisland, Co. Tyrone.	221	161	31	382

SECTION 2.—WHITE LEGHORNS (OPEN). 8 PENS.

1	34	Mrs. E. Johnston, Craigboy, Donaghadee, Co. Down.	124	127	89	251
2	37	Mr. J. Waugh, Ballyrickard, Kilwaughter, Co. Antrim.	77	173	82	250
3	33	Mr. W. Gunning, Inglenook, Ballywalter, Co. Down.	115	114	110	229
	38	Mrs. E. D. Workman, Legamaddy House, Downpatrick, Co. Down.	104	125	70	229

SECTION 3.—RHODE ISLAND REDS (OPEN). 38 PENS.

1	75	Mrs. E. R. Dunwoody, Benmore, Islandmagee, Co. Antrim.	291	133	19	424
2	59	Mrs. J. McNeill, Drain's Bay, Larnoe, Co. Antrim.	302	117	21	419
3	63	Mrs. D. Patterson, Ballycastle Road, Coleraine, Co. Londonderry.	180	181	14	361

SECTION 4.—ANY OTHER PURE BREED (OPEN). 14 PENS.

Position.	No. of Pen.	Name and Address of Owner.	Number of Eggs Laid.			Test Score Value.
			Super Grade.	First Grade.	Below First Grade.	
1	83	Mrs. H. W. Merrick, Agivey House, Aghadowey, Co. Londonderry.	196	113	26	309
2	82	Miss C. C. Meara, Coalisland, Co. Tyrone.	77	181	37	258
3	81	Mrs. T. J. McLaren, Ballykeel, Sixmilecross, Co. Tyrone. (All Light Sussex.)	99	152	76	251

SECTION 5 (a).—WHITE WYANDOTTES (STATION-HOLDERS). 13 PENS.

1	95	Mrs. R. McCullough, Bruslee, Ballyclare, Co. Antrim.	272	172	30	444
2	99	Mrs. M. Rodgers, Ballyginney, Dundrum, Co. Down.	200	179	88	379
3	98	Mrs. W. K. McAllister, Loughview, Woodburn, Carrickfergus, Co. Antrim	146	186	76	332

SECTION 5 (b).—WHITE LEGHORNS (STATION-HOLDERS). 10 PENS.

1	107	Mr. P. King, Leitrim, Banbridge, Co. Down.	216	94	12	310
2	104	Mrs. W. Crawford, Redergan, Beragh, Co. Tyrone.	160	85	38	245
3	109	Mrs. M. Noble, Roundpark House, Killyeramp, Lisnaskea, Co. Fermanagh	187	46	10	233
	113	Mrs. J. Brown, Gorsebank, Culcrum, Co. Antrim.	125	108	60	233

SECTION 5 (c).—RHODE ISLAND REDS (STATION-HOLDERS). 22 PENS.

1	120	Mrs. M. D. Bell, Woodview, Moneymore, Co. Londonderry.	254	131	28	385
2	118	Miss M. L. Fleming, Ballymenagh, Dungannon, Co. Tyrone.	254	100	17	354
3	125	Mrs. M. McClintock, Laymore, Ballymena, Co. Antrim.	93	260	78	353

SECTION 6.—POULTRY CLUBS AND YOUNG FARMERS' CLUBS. 17 PENS.

Position.	No. of Pen.	Name and Address of Owner.	Number of Eggs Laid.			Test Score Value.
			Super Grade.	First Grade.	Below First Grade.	
1	149	Banbridge and District Poultry Club. (Rhode Island Reds.)	202	174	41	376
2	141	Ballyclare Poultry Club. (White Leghorns.)	106	212	61	318
3	136	Ballywalter Young Farmers' Club. (White Wyandottes.)	151	153	48	304

The test score value means the total of super grade and of first grade eggs. Eggs which weigh less than 2 ozs. each are graded as "Below first grade" throughout the entire test period.

Mrs. McCullough's pen of White Wyandottes, which is leading in Section 5 (a), retains the position it held at the end of the third period of being the leading pen in the whole test, while Mrs. Dunwoody's pen of Rhode Island Reds, which occupies first place in Section 3, is second in the entire test, displacing from that position Mrs. McNeill's pen of the same breed, which is now third.

Nine birds died during the period, bringing the total number of deaths since the start of the test to 21. This represents a mortality rate of 2.3 per cent.

ANSWERS TO CORRESPONDENTS.

The following question of a topical nature is answered this month for the benefit of readers.

QUESTION.—Please inform me what is the best remedy for worms in pigs and at what age should the pigs be dosed.

ANSWER.—There are several proprietary powders on the market for expelling intestinal worms from pigs, many of which give satisfactory results. These powders should be used according to the directions given with them. A vegetable oil, known as Oil of Chenopodium, has also given very satisfactory results for expelling worms from pigs, and is more economic to use than many of the proprietary worm-powders. It is best mixed with raw linseed oil in the proportion of 1 part oil of chenopodium to 19 parts raw linseed oil. These oils can be obtained from any chemist.

The pigs should be fasted for at least 24 hours prior to dosing with oil of chenopodium, and only water allowed to drink. The amount of the dose to be given should be regulated according to the weight of the pig, as follows:—

For pigs weighing 30 lbs. (approximately 8 weeks old)	1 tablespoonful ($\frac{1}{2}$ oz.)
For pigs weighing 60 lbs. (approximately 11-12 weeks old)	2 tablespoonsful (1 oz.)
For pigs weighing 90 lbs. (approximately 15 weeks old	$3\frac{1}{2}$ tablespoonsful ($1\frac{3}{4}$ oz.)
For large sows	1 wineglassful ($2\frac{1}{2}$ oz.)

Six hours after the pigs have been dosed they should receive a light, soft feed containing an allowance of Epsom salts per head. The amount of salts to give again depends on the weight of the pigs. Pigs weighing 30 lb. each should receive about $\frac{3}{4}$ oz. each of salts; those of 60 lb. weight, about $1\frac{1}{2}$ oz., while pigs weighing up to 90 lb. should receive from 2 to $2\frac{1}{2}$ oz. each. From 6 to 8 oz. of salts per head should be given to large sows.

Dosing for worms is best carried out after the pigs are weaned, and on farms where these parasites are prevalent, the worming of all litters after weaning as a routine practice is strongly recommended. Breeding sows can also be dosed after the young pigs have been weaned or prior to farrowing, but it is advisable to dose in-pig sows at least one month before farrowing is due to take place.

After the pigs have been dosed for worms, the houses should be kept regularly cleaned out; otherwise fresh infestations of these parasites may be picked up. Dirty houses and yards are very conducive to the spread of worms, and unless an effort is made to improve housing and range conditions, the results obtained from the use of worm medicines will not be satisfactory.

PRICES OF FEEDING STUFFS.

The following table shows the average retail prices per cwt. of Feeding Stuffs at 1st February, 1936, with comparative figures for the corresponding date in 1935.

	1936.				1935.			
	Price per cwt.	Protein equivalent	Price per unit of protein equivalent	Starch equivalent	Price per unit of starch equivalent	Price per unit of protein equivalent	Starch equivalent	Price per unit of starch equivalent
STARCHY FOODS:								
Maize (whole)	s. d. 4 9	6.8	14 0	81.5	s. d. 1 2	5 9	81.5	s. d. 1 5
Maize Meal	5 2	6.8	15 2	81.5	1 3	6 0	81.5	1 6
Barley, Feed	7 2	10.0	14 4	45.3	3 2	6 11	45.3	3 1
Barley, White	8 5	10.0	16 10	45.3	3 9	8 1	45.3	3 7
Pollard, Brown	7 5	11.0	13 8	71.2	2 1	7 3	71.2	2 0
Pollard, White	8 1½	11.0	14 10	71.2	2 3	8 2	71.2	2 4
Barley Meal	6 10	6.2	22 5	69.7	2 0	8 2	69.7	2 4
Oats	6 6	7.6	17 1	60.0	1 1	5 6	60.0	1 10
Tapioca Root Flour	—	1.0	—	83.5	—	—	83.5	—
PROTEIN FOODS:								
Linsced Cake, home-made	10 2	25.0	8 2	71.8	2 10	10 9	71.8	3 0
Linsced Cake, foreign	9 3	25.0	7 5	71.8	2 7	9 11	71.8	2 9
Linsced Cake Meal	9 6	25.0	7 7	72.8	2 7	10 2	72.8	2 10
Cotton Cake, decorticated	8 7	35.0	4 11	71.2	2 5	9 1	71.2	2 7
Cotton Cake, undecorticated	—	17.0	—	39.2	—	7 0	39.2	—
Flax Nut Cake, decorticated	8 7	41.0	4 2	73.0	2 4	8 9	73.0	2 5
Flax Nut Cake, undecorticated	—	27.0	—	57.0	—	—	57.0	—
Soye Bean Meal (extracted)	8 11	38.0	4 8	64.0	2 9	8 10	64.0	2 9
Bean Meal	8 0	29.0	8 0	66.0	2 5	8 2	66.0	2 6
Pige Meal (69% protein)	15 6	53.0	5 9	58.9	5 2	13 0	58.9	5 5
Meat and Bone Meal (40% protein)	9 7	36.2	5 4	44.0	4 4	9 10	44.0	4 6
Meat and Bone Meal (60% protein)	14 3	54.9	5 5 2½	61.3	4 8	14 9	61.3	4 10
OTHER FEEDING STUFFS:								
Lin. & whole	16 3	19.0	17 1	119.2	2 9	15 9	119.2	2 8
Brewers' Grains (dried)	—	13.0	—	50.3	—	—	50.3	—
Palin Nut Cake	7 11	17.0	9 4	70.2	2 3	8 0	70.2	2 7
Palin Nut Meal	7 11	17.0	9 4	73.0	1 10	8 1	73.0	2 3
Potatoes	4 5½	0.6	147 11	18.0	4 11	2 14	18.0	2 1
Out. Straw	2 2	0.9	48 1	20.0	2 2	1 11	20.0	1 10
Swedish Hay	2 5	4.6	11 4	37.0	1 4	2 2	37.0	1 2
Turnips (Swede)	0 9	0.7	21 5	7.0	2 2	0 9	7.0	2 2

One of the objects of the foregoing table is to guide farmers in the economic purchase of feeding stuffs.

Ignoring their mineral content, the valuable constituents of any feeding stuff, whether home-grown or purchased, consist of :—

- (1) Carbohydrates—a group of substances which include materials such as starch, sugar, etc. They supply heat or energy to the animal, and the surplus is stored by the animal as fat.
- (2) Oil—which also provides heat or energy, the surplus being stored as fat. For this purpose oil is approximately $2\frac{1}{2}$ times as valuable as the carbohydrates, but its presence in the ration in excessive quantities may lower the digestibility of the ration and cause digestive troubles.
- (3) Protein—The group of bodies termed protein or albuminoids contain nitrogen. Protein is the only ingredient of a feeding stuff which can produce flesh or muscle, and hence its special importance.

All animals require a certain amount of each of the above constituents, but the relative amounts depend upon the class of stock. Thus, for example, a two-year-old fattening bullock requires a relatively small amount of protein (flesh forming material). Its ration should consist mainly of foods rich in carbohydrates, i.e., fat producing substances. On the other hand, a dairy cow is producing milk, which is a substance rich in protein, and as the protein, that is flesh forming material in milk, can only be derived from the protein in the food, the ration for the dairy cow must contain considerably more protein than that for the fattening bullock.

There are very wide differences in the composition of feeding stuffs, both home grown and purchased. Some, such as oats and maize, are rich in carbohydrates, and, therefore, particularly valuable for fattening purposes, whilst others, such as decorticated cotton cake, earthnut cake and linseed cake, are rich in protein, and are chiefly valuable for their flesh and milk-producing properties.

In the following table the composition of some of the more commonly used feeding stuffs is shown :—

PERCENTAGE COMPOSITION.

	Water.	Protein.	Oil.	Carbohydrates.
Turnips (Swede)	88	1	0.2	9
Potatoes	75	2	0.1	21
Oat Straw	14	4	2	37
Meadow Hay	10	10	3	45
Pasture Grass	80	3.5	0.8	10
Cabbage	89	1.5	0.5	8
Fattening Foods :				
Oats	13	9	6	60
Maize Meal	12	10	4	70
Barley Meal	13	12	2	66
Flesh Forming Foods :				
Linseed Cake	11	30	10	35
Decorticated Cotton Cake	9	40	9	26

The farmer frequently asks what is the cheapest feeding stuff to buy. It is, however, often very difficult to give a direct answer. Much depends upon what the feeding stuff is required for, whether for fattening or milk production. Again, maize and oats are essentially fattening foods, whilst decorticated cotton cake is a flesh-forming food, and it would be just as futile to use the cost per ton to compare their values as it would be to use the cost per ton to compare the values of, say, sulphate of ammonia and superphosphate.

Foods of similar composition can, however, be compared, and it is possible for the enterprising farmer to effect considerable economies, not only in the use of home-grown feeding stuffs, but particularly in the purchase of concentrated feeding stuffs, by studying the market prices.

The starch equivalent figure is a measure of the energy, heat or fat producing value of the feeding stuff, and shows the number of pounds of starch which would be required to give the same heat or energy as 100 lb. of the feeding stuff. For example, the table on page 48 states that the starch equivalent of maize meal is $81\frac{1}{2}$, or, in other words, 100 lb. of maize meal will provide as much heat or energy as $81\frac{1}{2}$ lb. of pure starch.

The protein equivalent figure shows the number of pounds of digestible flesh or muscle producing material in 100 lb. of each of the feeding stuffs listed.

PRICES OF FERTILISERS.

The following table shows the ranges of retail cash prices of fertilisers per ton at 1st February, 1936.

			Cost of unit of fertilising ingredient at average of range of prices shown.		
Nitrogenous Manures.			Nitrogen	Phos. Acid	Potash
Nitrate of Soda (15%N)	£7 12 6	to £8 15 0	10/11		
Sulphate of Ammonia (20.6%N)	7 2 6	to 7 15 0	7/3½		
Nitro Chalk (15.5%N)	7 10 0	to 9 0 0	10/7½		
Phosphatic Manures.					
Superphosphate (16% S.P.A.)	£3 10 0	to £4 0 0		4/8½	
Semsol (5% S.P.A. 15½% P.A.)	3 5 0	to 3 10 0		3/9½	
Basic Slag (18% P.A.)	3 10 0	to 4 0 0		4/2	
Gafsa Mineral Phosphate (26% P.A.)	2 10 0	to 3 5 0		2/2½	
Potash Manures.					
Kainit (14% P.)	£3 0 0	to £4 5 0			5/2½
Potash Salts (20% P.)	3 17 6	to 4 15 0			4/3½
Potash Salts (30% P.)	4 17 6	to 6 0 0			3/7½
Muriate of Potash (50% P.)	7 5 0	to 10 0 0			3/5½
Agricultural Salt	£1 0 0	to £3 0 0			

Abbreviations: N.=Nitrogen. S.P.A.=Soluble Phosphoric Acid.
P.A.=Phosphoric Acid. P.=Potash.

The cost of the unit of fertilising ingredient is determined by dividing the price per ton by the percentage of the ingredient contained in the manure, and this method of determining values is the only sound basis on which two grades of a manure which supplies the same fertilising ingredient can be compared. The price per ton is not a reliable guide as to which is the better value for money. For example, in the above table it is seen that the average of the range of prices for 14% Kainit is £3 12s. 6d. per ton, and for 30% Potash Salts £5 8s. 9d. per ton, and it might be concluded that the Kainit was the better value for money. This is not so. The 30% Potash Salts contains more than twice as much Potash as the Kainit, and is, therefore, a cheaper source of potash when the price is even double that at which the Kainit is offered. The cost of a unit of Potash in the 30% Potash Salts is seen to be only $3/7\frac{1}{2}$, whereas the cost of a unit of Potash in Kainit is $5/2\frac{1}{4}$. At the prices ruling for these manures, 30% Potash Salts is, therefore, better value for money than Kainit. Similarly, it is seen that at the prices prevailing Gafsa Mineral Phosphate is a cheaper source of Phosphoric Acid than Basic Slag, and that Sulphate of Ammonia is the cheapest source of Nitrogen.

In connection with the costs of the units of Phosphoric Acid as shown in the table on page 50 it should be noted that in the case of Superphosphate, the cost is that of a unit of Soluble Phosphoric Acid, whereas in the cases of Basic Slag and Gafsa Mineral Phosphate the figures represent the cost of a unit of insoluble Phosphoric Acid. It would not, therefore, be correct to compare the unit price of the phosphoric acid in Superphosphate with those of the phosphoric acid in the other two.

Statement showing the Shipments of Live Stock from Northern Ireland Ports during the months of January, 1936, December, 1935, and January, 1935.

PORTS OF :—	CATTLE.						SHEEP.				PIGS.			Horses.
	Milch Cows		Springers	Calves	Total	Fat	Stores	Lambs	Total	Fat	Stores	Total		
	Fat	Stores												
Belfast	9,151	5,841	1,022	37	—	16,051	2,775	—	—	2,775	3,929	1	3,930	320
Larne	10	899	—	—	—	909	—	—	—	—	1,064	—	1,064	15
Londonderry ..	454	4,106	21	31	925	5,537	450	—	—	450	317	—	317	—
Newry	99	135	—	—	—	234	—	—	—	—	—	—	—	—
Total, Jan., 1936 ..	9,714	10,981	1,043	68	925	22,731	3,225	—	—	3,225	5,310	1	5,311	335
Total, Dec., 1935 ..	7,489	8,548	1,179	77	1,114	18,407	8,354	—	—	8,354	6,714	3	6,717	198
Total, Jan., 1935 ..	6,915	14,539	1,265	98	748	23,565	5,667	—	—	5,667	7,216	577	7,793	358

IMPORTS AND EXPORTS.

Table showing the Imports and Exports through Northern Ireland ports of certain Agricultural Products during the month ended 31st December, 1935, and the twelve months ended 31st December, 1935, with comparative figures for the corresponding periods in 1934.

(These figures are supplied through the courtesy of the Ministry of Commerce and are subject to revision.)

Commodity.	IMPORTS.				EXPORTS.			
	Month ended		Twelve months		Month ended		Twelve months	
	31st December		ended 31st Dec.		31st December		ended 31st Dec.	
	1935	1934	1935	1934	1935	1934	1935	1934
Bacon cwt.	1,651	3,166	30,998	40,308	31,735	28,809	262,277	202,595
Hams "	663	453	9,376	9,030	13,075	13,491	131,788	120,876
Pork "	—	10	8	604	4,377	5,375	40,208	39,081
Butter "	6,410	6,818	127,482	134,730	226	551	6,338	6,516
Eggs gt. hds.	8,639	8,616	77,733	72,178	131,600	119,243	3,323,415	3,229,816
Oat Products (including Oat-meal) cwt.	3,397	1,759	24,246	27,399	8,528	9,716	89,873	60,794
Potatoes tons	11	5	166	281	27,280	11,982	157,337	125,436
Poultry cwt.	—	3	163	89	18,471	17,639	154,193	153,693
Grassseeds "	2,823	1,278	44,515	26,062	32,900	59,865	277,085	283,062

During the month of December, 1935, 15,714 cwts. of oats were imported into Northern Ireland direct from abroad. There were no imports during the month of December, 1934.

PRICES OF FAT STOCK.

The following are the average prices per live cwt. of bullocks and heifers, sold at Belfast Auction Marts during each of the four weeks ended 28th January, 1936:—

Week ended.	Bullocks.		Heifers.	
	s.	d.	s.	d.
7th January	32	3	32	6
14th January	32	6	32	9
21st January	34	0	33	9
28th January	34	0	33	9

Average Prices of Live Stock at Fairs during the month of January, 1936.

Date	Fair.	Calves (under 9 months.)	Store Cattle.	Fat Cattle (18 months and over).	Springers.			Milch Cows.	Fat Lambs (under 12 months old).	Fat Sheep (over 2 years old.)	Young Pigs.
					Cows.	Heifers.	Per head				
		Per Head	Per Cwt. Live wgt.	Per cwt. Live wgt.	Per head	Per head	Per head	Per head	Per head	Per head	Per head
		£ s.			£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
1	Londonderry	-	24/- to 30/-	27/6	15 0	13 15	-	-	-	-	£ s.
1	Rathfriland	5 0	26/- to 32/-	-	16 0	13 10	13 10	13 10	-	-	1 6
2	Ballymoney	4 17/3	28/- to 30/-	29/6	14 15	-	14 0	14 0	1 6/-	-	1 11
2	Strabane	-	30/- to 32/-	30/-	15 0	-	11 10	11 10	-	-	1 7/6
3	Moy	-	28/- to 34/-	29/6	13 15	-	12 10	12 10	1 12/6	-	-
7	Omagh	4 15	28/- to 31/-	30/-	16 0	-	13 0	13 0	1 10/-	-	-
8	Crossgar	-	28/- to 30/-	-	16 0	14 0	-	-	-	-	-
8	Irvinestown	5 7/6	28/- to 31/-	29/-	15 10	13 0	13 10	13 10	-	-	1 14
8	Kilree	4 14/9	24/- to 31/6	29/-	15 10	11 10	13 10	13 10	-	-	1 11
10	Ballygawley	-	27/6 to 34/-	29/-	15 10	-	14 0	14 0	-	-	1 7
10	Enniskillen	3 12/6	23/- to 27/-	30/-	15 10	-	14 0	14 0	-	-	1 11/6
15	Lisnakea	4 5/6	26/- to 31/-	30/-	14 15	14 10	13 0	13 0	-	-	1 8
16	Ballynahinch	-	28/- to 30/-	-	16 10	14 0	17 0	17 0	-	-	1 6/6
18	Portadown	4	27/- to 34/-	30/-	16 0	14 10	13 10	13 10	-	-	1 13
20	Camlough	4 3/3	25/- to 27/6	29/6	14 10	14 0	17 0	17 0	-	-	1 15
21	Claudy	-	29/- to 29/6	29/-	-	-	-	-	-	-	-
21	Moneymore	3 15	26/- to 29/-	28/6	12 0	11 0	10 10	10 10	1 16/3	1 2	1 8/9
22	Fintona	4 10	28/- to 31/6	30/6	15 10	14 0	14 0	14 0	1 14/-	1 10/3	1 7/6
30	Antrim	-	26/- to 31/-	30/-	19 0	16 0	-	-	-	-	1 10
31	Castlederg	4 0	28/- to 29/6	30/-	11 10	12 10	-	-	-	-	1 5
31	Killylea	-	31/6 to 35/-	31/-	15 0	-	14 0	14 0	1 10/-	1 17/6	-
1st Feb	Ballymena	5 7	21/- to 33/-	-	17 5	17 15	15 10	15 10	-	-	1 14/6

* Downs and Cross.

† Mountain.

Table showing the numbers of Live Stock (1) exposed for sale and (2) sold at 21 fairs in Northern Ireland during the months of January 1935, December, 1935, and January, 1936.

Description of Live Stock.	January, 1935.		December, 1935.		January, 1936.	
	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.
Store Cattle ..	7,454	4,809	6,823	4,900	6,189	4,424
Fat Cattle ..	1,657	1,406	993	905	2,004	1,872
Dairy Cattle ..	1,231	990	1,270	1,030	1,194	986
Sheep ..	467	395	304	189	201	192
Lambs ..	125	101	209	204	303	233
Young Pigs ..	2,840	2,448	2,997	2,509	3,144	2,344

Weather conditions seriously handicapped trade in live stock at fairs held during the middle of the month, but it is interesting to note that whereas store cattle were in shorter supply in January than a month ago, the numbers of fat cattle were appreciably larger. There was a good attendance of buyers at most fairs, and they operated more freely than usual, with the result that trade for cattle classes was generally brighter. One satisfactory feature was the further slight improvement in the demand for stores, which were easier to sell, and prices for these finished firmer on the month. The best trade was done in large stores for finishing, but medium sorts were also in good demand. Store heifers were purchased for shipment, and in this connection it may be mentioned that shippers were more active in making purchases direct from the farms last month, and large numbers of cattle are reported to have changed hands in this manner. All the aforementioned classes may be stated to have shown a further slight advance in price on the month. On the other hand, small stores were a quiet trade at most fairs, probably on account of the lack of grazing. The larger supply of fat cattle met a better enquiry, and with the stock being generally of good quality, sales were readily effected and prices were firmer on the month. Most of the dairy cattle offered for sale at fairs during January were of second and third class quality, and, on the whole, trade in this section was slower, with prices tending downward. Nevertheless, really good dairy cattle, more particularly choice young springing cows and springing

heifers, could be sold easily at fully late rates. Fat sheep and lambs were in small numbers, and those fit for immediate slaughter were in keen request for local requirements at satisfactory prices. Most of the stock were, however, of poor quality, and, taking this fact into consideration, prices on the whole were quite good. Young pigs were in good supply, but trade slackened off during the month and prices inclined easier, although towards the close of January there was a tendency for conditions to improve in this section.

10th February, 1936.

This report will be sent free monthly as issued on application being made to the Secretary, Ministry of Agriculture, Stormont, Belfast.

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**GOVERNMENT OF NORTHERN IRELAND.
MINISTRY OF AGRICULTURE.**

List of Ministry's Leaflets and other Publications.

- | | |
|---|--|
| <p>No. 1. Flax Seed, 1935.
 " 2. Improvement of Farm Poultry.
 " 3. Feeding for Egg Production.
 " 4. Marketing of Eggs.
 " 5. The Dishorning of Calves.
 " 6. The Packing of Apples in Standard Boxes.
 " 7. Potato Variety Trials.
 " 8. Seed Testing for Farmers.
 " 9. The Renovation of Orchards.
 " 10. Fruit Tree Pests—Capsid Bugs.
 " 11. Fruit Tree Pests—Aphides and Apple Sucker.
 " 12. Fruit Tree Pests—Caterpillars.
 " 13. Contagious Abortion in Cattle.
 " 14. Cheese-making on the Farm.
 " 15. Suitable Varieties of Fruit.
 " 16. The Feeding of Dairy Cows.
 " 17. Home Bottling of Fruits and Vegetables.
 " 18. Marketing of Dead Poultry.
 " 19. How to Feed Linseed.
 " 20. The Hatching and Rearing of Chickens.
 " 21. The Uses and Advantages of Portable Poultry Houses.
 " 22. Leather-Jacket Grubs.
 " 23. The Handling and Care of Wool.
 " 24. Pluke in Sheep.
 " 25. The Rearing and Management of Young Horses.
 " 26. Ordnance Survey Maps for Farmers.
 " 27. How to Keep Eggs Clean.
 " 28. The Construction of a Laying House for Poultry.
 " 29. The Selection and Breeding of Laying Hens.
 " 31. Coccidiosis in Poultry.
 " 32. Roup of Poultry (Fowl Pox).
 " 33. Spraying Calendar for Apple Orchards.
 " 34. The Pruning of Apple Trees.
 " 35. The Fattening of Pigs.
 " 36. Advantages of Milk Recording.
 " 37. The Raising and Fattening of Turkeys.
 " 38. The Destruction of Charlock.
 " 39. The Production of Clean Milk.
 " 40. The Laying Down and Management of Temporary Pastures.
 " 41. Blackleg, Blackquarter or Quarterill.
 " 42. The Purchase of Balanced Rations for Dairy Cows.</p> | <p>No. 43. Tuberculosis in Poultry.
 " 44. Results of Crop Experiments.
 " 45. The Breeding and Rearing of Pigs.
 " 46. Hints for Winter Egg Production.
 " 47. The Care and Management of Sheep.
 " 48. Baby Beef Production.
 " 49. American Gooseberry Mildew.
 " 50. Potato Blight.
 " 51. Butter-making on the Farm.
 " 52. Gapes in Chickens.
 " 54. The Breeding and Rearing of Calves.
 " 55. Destruction of Ragwort or Benweed.
 " 56. Identification of Egg Supplies.
 " 57. How to have Eggs of First Quality.
 " 58. How the Fertilisers and Feeding Stuffs Act benefits the farmer.
 " 59. Bacillary White Diarrhoea.
 " 60. Advantages of Winter Agricultural Classes.
 " 61. The Care and Management of Breeding Bulls.
 " 62. The Production of Timber on the Farm.
 " 63. Sheep—Castration, Docking, Foot-Rot and Care of Feet.
 " 64. The Destruction of Warble Fly Maggots in Cattle.
 " 65. The Packing of Apples in Barrels.
 " 66. Seed Testing Facilities for Traders.
 " 67. The Cultivation of Vegetables.
 " 68. The Cultivation of Strawberries.
 " 69. The Construction of Piggeries.
 " 70. Ringworm.
 " 71. The Cultivation of Raspberries.
 " 72. Tree Planting for Shelter and Ornament.
 " 73. The Propagation and Maintenance of Healthy Stocks of Potatoes.
 " 74. New Pure Strains of Flax.
 " 75. Pig Production and the Pigs Marketing Scheme.
 " 76. Acarine (Isle of Wight) Disease of Bees.
 " 77. Licensing of Milk Producers and Distributors.
 " 78. Graded Milk.
 " 79. The Picking and Storing of Apples.
 " 80. Hoose or Husk in Farm Stock.
 " 81. The Construction of Cow Houses.
 " 82. White Scour in Calves.</p> |
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Any of the above leaflets may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

CIRCULARS.

- No. 1. Phosphatic Fertilisers.
 " 5. Why Pay a Tax on the Horns of Cattle?
 " 8. Basic Slag.
 " 9. Smut in Oats.
 " 10. Purchase of Fertilisers and Feeding Stuffs.
 " 11. Fertilisers and Feeding Stuffs Act—General Summary.
 " 12. The treatment of Liver Fluke.
 " 306. Fertilisers and Feeding Stuffs Act, 1926—Revision of Regulations.

MISCELLANEOUS PUBLICATIONS.

Store Cattle.
 Reports on Egg-Laying Tests.
 Crop Insurance.
 List of Growers of Certified Crops of Immune Varieties of Potatoes.
 List of Growers of Certified Crops of Non-Immune Varieties of Potatoes.
 The Ministry's Monthly Report.
 Register of Premium Stallions.
 Guide to the Live Stock Breeding Act (Northern Ireland), 1922.
 Guide to the Marketing of Fruit Act (Northern Ireland) 1932.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 80 Chichester Street, Belfast, at the prices stated:—

- (1) The Annual Report of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
- (2) Annual Report upon the Agricultural Statistics of Northern Ireland. Price 2/- net.
- (3) The Journal of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
- (4) The Agricultural Output of Northern Ireland, 1925. Price 2/6 net.

